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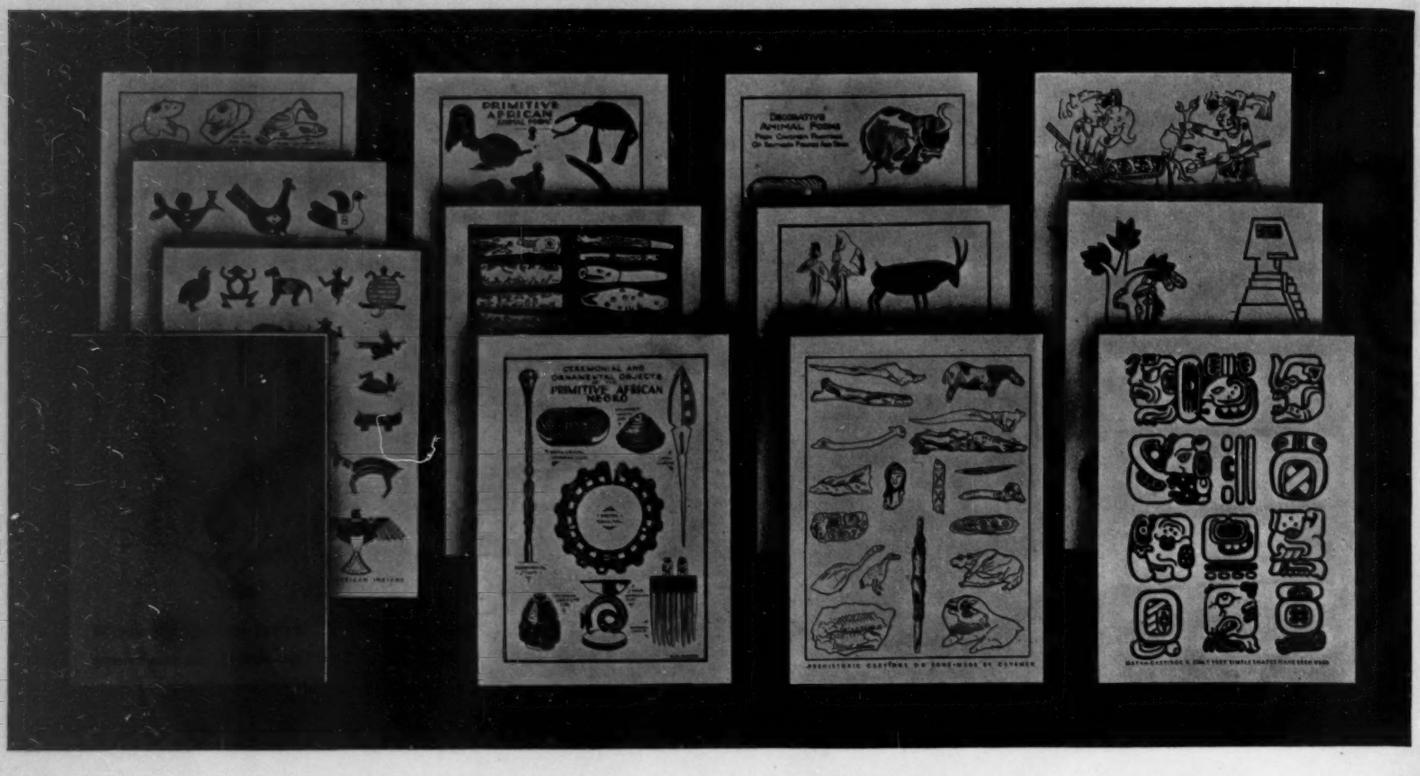

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VOLUME 40 NUMBER 8 MARCH, 1939

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The University of Iowa Art Conference

The University of Iowa is this year sponsoring an Art Conference for college and high school teachers of the middle west, open to anyone interested in art. It will be held at Iowa City on Friday, April 21, and Saturday, April 22. This conference as planned by the Department of Art at the University, will expand the scope of the regular annual high school art exhibition and conference, in order that a larger program may be set up around the basic questions of philosophy and methods of art teaching in high schools and colleges. It contains a cross section of the best work being done in the high schools of the state. The judges this year are Grace Sabodka, Professor of Art Education, George Peabody College for Teachers, Nashville, Tennessee; Dwight Kirsch, Head of Department of Art, University of Nebraska; and Marion Miller, Supervisor of Art, Public Schools of Denver, Colorado.

Iowa's new building and excellent equipment make it an ideal place for a meeting of this kind. The building was dedicated in 1936 and is considered one of the finest in the country. Air conditioned, modern, it contains a large central exhibition gallery, auditorium, art library, seventeen studios, small lecture room, seminar room, offices, and storage and packing rooms. Two spacious studios, one for sculpture and one for mural painting, are connected to the main building by arcades. Graduate students coming to Iowa find that the opportunities offered by this completely equipped plant and the department's liberal attitude in considering creative work in art as an important phase of graduate study are a great incentive and attraction.

The program scheduled for the conference will be featured by the appearance of Millard Sheets, well known painter from the west coast and a leading American water colorist. Mr. Sheets will give a lecture and demonstration in water color painting. Talks by Grant Wood, Associate Professor of Art at the University of Iowa, and Ulrich Middeldorf, Head of the Department of Art at the University of Chicago, will be other highlights of the two-day session. University of Iowa men of prominence to appear will be Dr. George D. Stoddard, Dean of the Graduate College, Dr. George F. Kay, Dean of the Liberal Arts College, Dr. Paul Packer, Dean of the College of Education, and Dr. Earl E. Harper, Director of the School of Fine Arts.

Visitors to the conference will find an interesting array of exhibitions.

Anyone interested in the subject of art education is welcome to attend the conference and programs will be sent to all who care to have them. Communications and requests for information about the conference should be addressed to Dr. Lester D. Longman, Head of the Department of Art, State University of Iowa, Iowa City.

The subjects to be taken up at the conference will include, "What the College and High School may do for Art Education in the Community", "The Teaching of Art Appreciation in College and High School", "The Education of a Professional Painter", "The Training and Professional Requirements of Commercial Artists", "Art Training in the Art Institute vs. the University", "Art Education in the University — Graduate and Undergraduate Curricula", "Aims and Methods in High School Art Teaching", and "The Training of an Art Teacher".

According to the present plans, the complete roster of speakers is composed of Albert Christ-Janer, Head of Art Department, Stephens College; Paul Harris, Director of the Des Moines Fine Arts Association; Kenneth Hudson, Director of the St. Louis School of Fine Arts; Dwight Kirsch, Head, Department of Art, University of Nebraska; Ulrich Middeldorf, Head, Department of Art, University of Chicago; Marion Miller, Supervisor of Art, Denver Public Schools; Rexford Newcomb, Dean, College of Fine Arts, University of Illinois; Paul Parker, Head, Department of Art, University of South Dakota; Grace Sabodka, Professor of Art Education, George Peabody College for Teachers; Millard Sheets, Professor of Art, Scripps College; and from the University of Iowa, Earl E. Harper, Director of the School of Fine Arts; George F. Kay, Dean of the College of Liberal Arts; Lester D. Longman, Head, Department of Art; Paul Packer, Dean of the College of Education; Edna Patzig, Associate Professor of Art; George D. Stoddard, Dean of the Graduate College; and Grant Wood, Associate Professor of Art.

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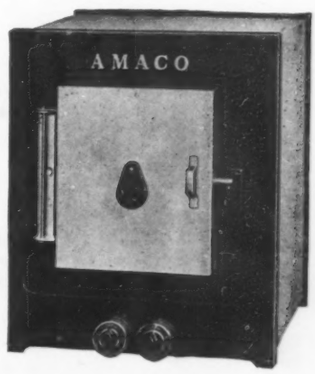

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ITALIAN ARTS AND CRAFTS

Cherished heirlooms and mementos of Italy have been lent to the Brooklyn Museum for the current exhibition of Italian Arts and Crafts, on view through March 26th. Mrs. Sandro Benelli, Frank Chiusa, Miss Jeanette Califano, Mrs. G. G. Chiarello, Mrs. Califano,, Miss Candela, Mrs. Anthony Di Giovanna, Rose Galante, Mrs. Joseph Lucarelli, Mrs. Martella, Mrs. B. Montalbano, Mrs. Nicosia, Mrs. A. J. Petti, Miss Catherine A. Van Brunt, Mrs. Vicari, Mary C. Vicari and Albert Vaggerani are lenders. Several lenders are members of the Coro d'Italia Inc. In addition, the Mamma Mia Importing Company, Inc., has lent a life-sized Sicilian cart. Ecclesiastical vestments given by the Rembrandt Club, rich with velvet and gold embroidery are included in the exhibitionn. The Brooklyn Museum Collections have also contributed cut velvet and satin embroideries, Venetian glass candlesticks, Deruta majolica, coral jewelry, huge seal rings, cameos, religious jewelry in gold and enamel, gold jewelry, mosaics and a filigree card case.

Among the costumes shown are a man's suit from Sardinia lent by Albert Zaggerani, a bridegroom's suit from Loreto lent by Frank Chiusa, a girl's costume from Sicily lent by Mary Vicari, a girl's costume from Piedmont lent by Rose Galante, a child's baptismal dress lent by Mrs. Ristori, a morning jacket made for a trousseau lent by Mrs. Joseph Lucarelli and a doll's trousseau lent by Miss Jeanette Catalano.

Jewelry and silver work have been lent by Mary C. Vicari, Mrs. B. Montalbano, Mrs. J. Spadaro, Mrs. Nicosia, Mrs. Vicari, Miss Candela and Mrs. Ristori.

Mrs. Martella lent a child's coverlet, Mrs. G. G. Chirello a table cloth of drawn work and venice lace, Mrs. Califano contemporary pottery from Perugia, Miss Anita Candella a sampler, Miss Van Brunt doll furniture and a miniature Sicilian cart, Mrs. Robert Ristori a model of a royal coach, Miss Vicari plaster dolls, Mrs. A. J. Petti a pair of carved castanets from Salerno and Mrs. Sandro Benelli a miniature wayside crucifix in a shrine.

STATUE OF MERCURY ADORNS FORD EXHIBIT

The swift, effortless travel made possible by the modern motor car is to be exemplified in an heroic figure of Mercury, the "winged messenger" of the gods done in gleaming stainless steel, which will tower above the entrance to the Ford Exposition at the New York World's Fair.

The statue, 25 feet high and weighing three tons, is the work of Robert Foster, eminent young sculptor and industrial designer. The designer has taken full advantage of a unique method of construction in hanging the sculpture so that the figure will be free from the building, a three point bracing holding it in place.

As a result of this unusual method of suspension, the figure appears to be in flight. The statue is formed entirely of bent stainless steel sheets, electrically welded. Despite the material employed, skillful use of lights and shadows in the design gives the figure a feeling of intense form and vitality.

"Sculpture is form and form is only recognizable to the eye through light and shade," said Mr. Foster in discussing his design. "This type of construction gives a maximum amount of srtuctural strength from a minimum amount of material and it is purely functional and direct in approach. There is no attempt to make it look any different from what it actually is, which is, to me, one of the tests of truly modern sculpture."

The genesis of this new type of sculpture, in keeping with the modern age of steel and steel alloys, may be traced to the fact that Mr. Foster, before choosing the graphic arts as a career was an engineer for some years. His experimental work in sculpture was decorative. Later he developed into structural design. It is in this field that he has become widely known. During 1937, he was graphic consultant for the New York World's Fair. In addition to the Ford Exposition figure, he has designed steel figures for the Textile Building and the United States Government building at the Fair.

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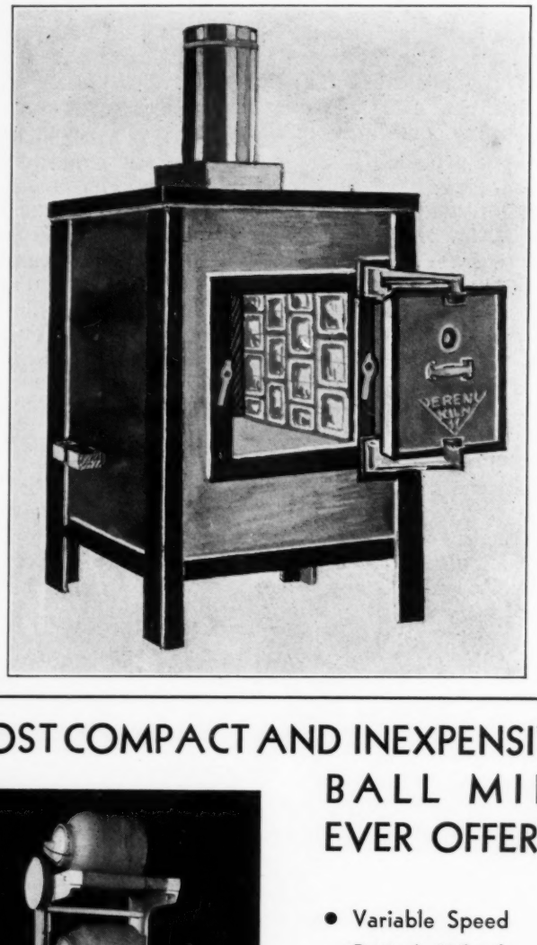

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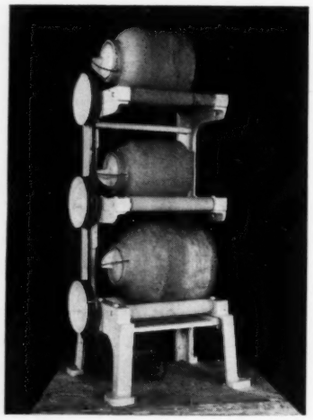

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WRITE FOR NEW BULLETIN No. 38

CLEVELAND THEATRE FOR YOUTH

It is one thing to design scenery for a certain known stage, where the dimensions are immutable, where the lights may be placed to advantage after leisurely experiments, and all the effects clearly seen beforehand. And it is not much more difficult to dress a play which is to be shown at a number of the regular commercial theatres, where most of the measurements are standard.

But you must have a set which can be used on seven or eight very different stages during a week, and many of these stages of "cracker-box" proportions, that is another thing.

Cleveland's Theatre for Youth, directed by Elbert P. Sargent—whose dramatic groups won national prizes when he was coach in the schools of Colorado Springs, and in Shaker Heights in Cleveland—is a Federal Theatre unique for the whole country. It is the only one whose primary object is theatre for children. In less than two years, after a hopeless start, it has grown to a theatre of impressive size. It has become the framework in reality of a dream held by its director for many years; a theatre for children, yet staffed only by professional adults—a theatre of their own such as American children have never had.

Starting from scratch in March, 1937—with donated rehearsal quarters in a windy corner of a radio station's garage—the new theatre could scarcely get a booking, and one of its first audiences numbered just 67 children. Now it plays to several thousand young Clevelanders every week. By January first, 1939, its total audience had exceeded 200,000.

One of the reasons this upstart Youth Theatre can reach such large audiences is undoubtedly because most of its performances are given right in the schools themselves, during the school day in the regular auditoriums. And that is where the cracker-box sized stages are to be found—especially in the elementary schools. One day the theatre played on a bare platform, with no sides, and with folding doors in place of a curtain. On another day it played in a large room with no semblance of a curtain, and treated its young audience to all the scene shifting.

The sets for such a mobile theatre obviously have to be a minimum. They have to be what will go on a rather small truck, ready to be moved to another stage on the same day. Yet, although they are used in a theatre which is probably as flexible as any serious theatre in the world, they cannot be too simple, too slight. The theatre's distinction lies in its production of plays for children that are made by professionals in every line of the work. The verve, charm and efficiency with which sets and costumes are created have been a keynote of the activity, and help to explain its lively success.

The work of Miss Guilbeau correlates with all other production angles, but she probably depends most on Kay Hamlin, stage technician and expert carpenter. He is the man who tells the artist whether it can be done.

For the theatre's most recent new play, "Pinocchio", Miss Guilbeau, its designer, uses a simple accordion-type set, one part on each side of the center entrance. For a shorter than average stage these can be pushed together somewhat, just like any folding screen, and for a wide stage they can be spread out farther, and left more shallow in depth. Extra side pieces can be added and they can be supplemented further by some squares made and painted like huge toy blocks.

There are always variations in the use of the sets to conform to different school, and other, stages. But, if possible, the center space must be left the same size and the entrances at the sides must be kept. Since the designer has found that some of the stages are as low as ten feet, the "Pinocchio" set was built just under ten feet high. In one school it reached to within half an inch of the ceiling. Sometimes beams interfere so that the set has to be spaced quite differently and something added to the background. For variation in the several scenes, besides a change in wall and other properties (in "Pinocchio" a window was suggested by an attractive framed square hanging with modernistic effect in front of one accordion-shaped side of the set) Miss Guilbeau often uses a brilliant drop hanging on battens, or narrow wooden bars, in the center space. For instance, for a circus scene in "Pinocchio", a huge painted tiger cage replaces the center entrance.

For a scene in the woods in the same play the artist simply had scrim, with trees appliqued on it, draped down over the top of the regular set to cover it. And because of the accordion-like edge of the set behind, there were shadows in the corners formed back of the material which gave a little added illusion of depth to the forest.

Where a basic set is used in a play with several scenes, the color of the set has to be inconspicuous and yet lend itself to varying scenes interestingly. Miss Guilbeau chose aluminum color for the "Pinocchio" set, but found that at first the aluminum paint would not work. It was applied after the duck material of the set had been backed with wood frames and sized—the usual process—but this paint soaked in. So a coat of varnish had to be put on first, over the sizing. The aluminum color is excellent under lights. It can be dimmed to a dull, flat color, or have varying brilliant tints under stronger lights.

The "Pinocchio" set has been completely adaptable even to the requirements of elementary school stages, and it has been effective background for a very spirited play.

In the case of a more pretentiously dressed play, A. A. Milne's beautiful fairy-tale of "The Ivory Door", the set had to be used on a much larger than average stage when it was given out-of-doors last August in Cain Park in Cleveland Heights. The set, which is suitable to stages 20 feet wide, was expanded to fit a stage 80 feet wide by 60 deep. It consists of a group of pale gray sections stippled with color for changing effects under lights, and including several more than enough for average needs. These are piled up for height, making pillars of blocks. One of four sections used in a cluster at the center entrance is always omitted for a small stage. For Cain Park everythnig had to be used including extra side pieces and the ends of the stage were masked with shrubbery.

To give extra height the pieces of the set were mounted on a borrowed platform, the steps leading up thus becoming part of the scene. The actors walked through the center entrance from the platform level in back. The stage floor being of cement added to the out-of-doors problem of anchoring the scenery, and sandbags were used. The work of stage manager Frank Cummings, with 20 years of experience in the theatre, is of vital importance on all such occasions, of course.

Besides building the sets and ordinary properties with the aid of two assistants, the stage technician handles some finicky carpentering jobs. To do the assignment right, he had to spend ten hours sawing out the handsome design in the back of the throne chair which appears in "The Ivory Door". He and his crew keep scenery in repair and repainted where necessary. It gets a record amount of trucking and handling each week (although two or more shows are given in most locations) and the average run of the plays so far has been about 97 performances. There is also constant experiment with new features in a play such as "Pinocchio" which apparently will play well over 100 performances before it is six months old, and any number after that. This often means extra work for Mr. Hamlin.

After studying many tapestries the designer painted a striking back drop comprised of several large figures in a medieval group for the center entrance of "The Ivory Door" set when the throne room was shown. A plain center drop took its place for a street scene. Thus an effect of great richness, enhanced, of course, by more elaborate costuming, was gained by making very little actual change in the physical background of the play. (It happened that the artist painted this drop on the floor—and studied it from the top of a piano—because there was no free space for her to work in the theatre's barn workshop.)

For costumes, most of which must be made from the cheapest materials, the use of color is especially important. For

each play Miss Guilbeau starts a simple scheme. Often she begins by dyeing most of the costumes all the same color—for example, yellow. The costumes of the mob (or a similar group) will then be left this pure color, but she will re-dye the material for other costumes, or add other color designs. For some reason a more vibrant color results when a cloth is dyed first yellow and then blue to get a certain green than if it is simply dyed green at first; and a ground color such as yellow for all the costumes seems to hold the whole picture together. A slightly mottled color takes the light better than a shining, flat color such as in sateen. Ready-dyed sateens are never used.

The artist abides by instinctive rules of dimensions and taste for stage costuming. For instance, she uses large-sized designs on costumes (since smaller patterns would be lost on the stage) and creates them seeing each figure in relation to the whole scene and to the other figures.

Materials include a type of unbleached muslin like a semi-duck, where the cloth is to hang heavily, and (a favorite) a cheap jersey such as is used for cotton underwear. Occasionally an airier costume is made out of china silk. The chief color work is done with dyes. Designs are painted or appliqued on the cloth.

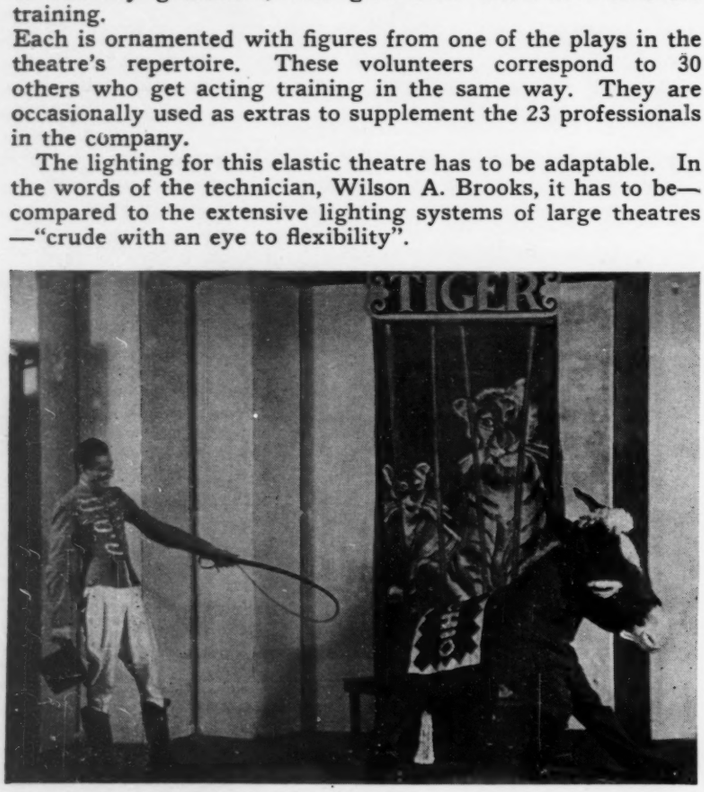
The artist has found that to paint on muslin she must use the dye hot. Miss Guilbeau discovered that rayon material will take her dyes if she mixes them with water to form a thick paste, and then adds alcohol. The mixture is sprayed on. When she immerses cloth in a dye bath she first soaks it to get out the sizing, but when the cloth is to be painted she leaves the sizing in.

The making of masks is a regular part of this stage designer's work. For example, she made the great donkey-head for "Pinocchio"—used when the marionette-boy is turned into an animal to punish him for staying away from school, and she made frog masks for "Sir Frog Goes A'Travelling". For "The Ivory Door" she made shoes. She bought leather for the soles, made the tops of muslin and with special triangular needles from the leather company, sewed the tops to the soles.

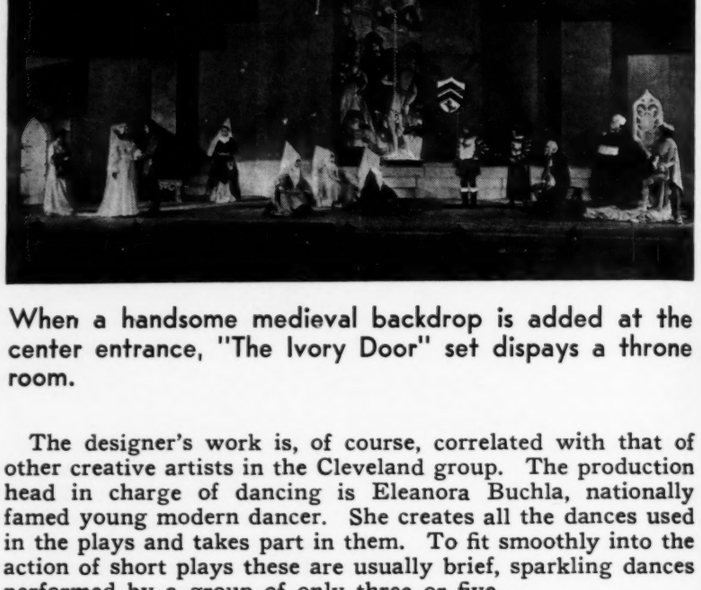
Besides the dressmaker who puts together the garments she plans, Miss Guilbeau is assisted in many chores by a group of art volunteers. These are young people in school or recently graduated, who give their work in return for training.

Each is ornamented with figures from one of the plays in the theatre's repertoire. These volunteers correspond to 30 others who get acting training in the same way. They are occasionally used as extras to supplement the 23 professionals in the company.

The lighting for this elastic theatre has to be adaptable. In the words of the technician, Wilson A. Brooks, it has to be—compared to the extensive lighting systems of large theatres —"crude with an eye to flexibility".



By blocking out the center entrance with a backdrop showing a tiger cage, the "Pinocchio" set is transformed for a circus scene.



When a handsome medieval backdrop is added at the center entrance, "The Ivory Door" set dispays a throne room.

The designer's work is, of course, correlated with that of other creative artists in the Cleveland group. The production head in charge of dancing is Eleanora Buchla, nationally famed young modern dancer. She creates all the dances used in the plays and takes part in them. To fit smoothly into the action of short plays these are usually brief, sparkling dances performed by a group of only three or five.

On the same inventive plane is the work of Franklin Benjamin, pianist, and Carl J. Graver, violinist, who together compose, besides playing, the music for each show. Mr. Benjamin is a protege of Ossip Gabrilowitz, and a specialist on the Beethoven sonata. Early last fall he was loaned to the Cincinnati Federal Theatre long enough to write the music for its very successful production of "Macbeth".

Just to touch on the standards and the capacity of the acting company—it includes a former character player with Lunt and Fontanne (Larry Mackie, who played the English Toff in "Pygmalion"), a leading character man with Jeanne Eagles (Phil Miller), four other actors who had had equivalent experience with other well-known theatre names, and several who have worked in permanent stock companies in such cities as Boston, New York and Cleveland. One Hungarian star of many musical plays has made several tours of Europe and once played before King Ferdinand and Queen Marie of Roumania.

The national organization of the Federal Theatre does not provide funds to cover such expenses as costume, trucking and royalty, and thus, to some extent, the Theatre for Youth must pay its own way from its very small income.

School heads and the children themselves have shown their appreciation in the concrete way—by attendance, and by asking for the next show. One girl of nine wrote, "We liked your play so well that it was worth paying a nickle. When are you coming to our school again?"

The designer for such a pliant theatre for the young must be, first of all, simply a good artist. It is the opinion of young Honoré Guilbeau—a scholarship art student whose lithographs have taken prizes in international exhibits in Chicago and Cleveland—that her theatre work fundamentally requires just a trained person who knows a good design, whether it is on the stage or in a picture. So, in her case, the pictures she has drawn bear the same relation to her good eye, her training, her freshness and skill in design, as her theatre art. She works with other artistic handymen in whatever medium will help to bring real theatre—not Hollywood, not amateur plays—but the "beautiful excitement of the theatre"—as planned for them—to children.

Just as the plays themselves must usually be cut and shaped by Director Sargent to fit into an hour or 50 minutes of playing time, the physical appearance of them must also be cut to size. There must be proportion and liveliness and true art on a scale that fits.

This theatre whose activity and limitations have no precedent has to be run by people who, having read all the books, can throw them away and start all over because they have to try something the books don't yet know about.

NEW APPROACH TO COSTUME DESIGN

BY BLANCHE NAYLOR

"Mardi Gras" informal dining or garden dress hand-blocked and designed by Magda Polivanov in conventionalized floral pattern of grass green and daffodil yellow on lightweight unbleached muslin. Tight fitting basque top, halter neck and full circle flared skirt.

Dramatic effects in costumes especially designed for moderns who demand practicality as well as charm have been achieved by Magda Polivanov, working with a great variety of materials and with varied techniques.

A recent exhibit of hand-blocked prints shown upon such widely differing fabrics as velvet and unbleached muslin emphasized the great versatility which the designer has combined with careful execution for the production of "designs for today" based upon the ideas and motifs of many countries and many times.

Each individual creation has been named most aptly, and the finished results impressed all who saw them at Madame Polivanov's workshop on East Eighth Street, where she evolves her carefully studied plans for strikingly different lines in unusual costumes suitable for innumerable purposes, casual sports, garden, beach wear, frocks and wraps for evening. The American market is one in which there is a definite demand for practical features as well as smartness. Magda Polivanov has kept this fact in constant consideration in the combining of deep, rich colors with contrasting designs applied so that they are not only effective for the first few wearings but are certain to retain their freshness until the costume is worn out. By constant experimentation, Madame Polivanov has discovered a perfect but difficult means of achieving absolute washability in washability in all of her fabrics. She has hand worked them so effectively that unbleached muslin has been made to acquire a textural finish resembling crushed velvet. This is done by repeated and extremely careful treatment in oil baths with several launderings to prove its durability, and final textures which are excellent and strikingly new in effect. The work being done by her staff and studio today is the result of years of experiment in hand blocking. Magda Polivanov began her studies at an early age and intends to continue them constantly. She has worked with coutouriers in Europe, and prior to that designed stage sets and costumes for Diaghilev and his Russian ballet. In her early youth she was instructed by Nicholas Constantine Roerich, the modern painter, who was a tutor in her family. Her father, General Constantine Polivanov, was killed along with her brother and young husband during the revolution. She herself was wounded and escaped to England. There she became the ward of General Sir Tom Bridges who was later the Governor of South Australia. She attended the Royal Academy in London and won a scholarship, then was a pupil of Vladimir Polunin, specializing in scenery and costume design. Later attended Bella Art Academy, Florence, Italy. In France she has worked for both Schiaparelli and Madame Chanel, and has given "one man" exhibits of her work in both London and Paris. Here she has concentrated on designing for textile manufacturers and interior decorators, and is now producing her own independent group of high-fashion costumes.

With such a differentiated and cosmopolitan background, she naturally has an immense fund of ideas to work out in her designs. She is very fond of large motifs in borders or all-over patterns, and especially likes these done in rich, subtle tones upon soft earthy colors. Each costume in her display is an individual creation since it is blocked by hand directly following the cut of the garment. A great many of the beach clothes with separate skirts and bodices are interchangeable and can be used either as skirts or capes. All are very original both in plan and execution. Her own technique in the use of special linoleum blocks which are treated to withstand the wear of continuous printing, makes it possible to produce these designs in some quantity. The greatest problem after the solution of the blocking technique was to evolve absolutely colorfast dyes. A special dye formula has now been evolved. Magda Polivanov mixes her color tones just as the great masters have always mixed their paints from the five basic colors, and the resultant range is naturally tremendous since she can achieve almost any gradation of shading from the pale delicate pastelles to the rich, strong, vibrant shades. Her success with this problem of proper dyes has been so great that she has subjected all of her productions both to laundering and dry cleaning.

Such costumes as those she calls "Serafan",—oriental coat dresses of unbleached muslin, loosely fitting for wear over bathing suits, or for informal home or garden wear, are notable for their full, rich colors of wine and deep blue in the all over design, with wide crushed belt of wine-color stressing the suede like finish obtainable in this work. Firebird designs are used upon these in green and gold. Another called "Ballerina", designed with a bolero and a full, short peasant skirt shows a sea dragon motif. There are several cape-skirts, made from a full circle of material with the rich gold and cave blue—and in these the flying motifs add to the fluid effect of the swinging pattern. "Rancho", a playdress inspired by her recent trip to Texas and the West has a close fitting bodice, flared skirt with green and brown zig-zag fence design appropriately applied on muslin. A lobster red jacket printed in navy is of spun-rayon and wool. (Incidentally it took some

time for Madame Polivanov to be convinced that rayon could be used by her, but after finally deciding to try it she has found it to be a marvelously subtle medium for the carrying out of her designs.) "Perennial", well named for a garden and home frock, has a full peasant skirt with bib top, printed in brown and green and worn with a very pale green voile peasant blouse.

Madame Polivanov recently became an American citizen and in celebration of that event she designed "Independence Day", a play dress printed in red, white and blue. In this there is a very smart contrast in the blocking of small stars and stripes in angular effect. "Fiesta", an informal dining costume is composed of a full circle skirt of light weight muslin printed in parrot design of blue and lobster red, worn with blue voile peasant blouse and red, yellow and blue and natural wooden beads. A festoon of gay ribbons hangs down the back of this model, the blocking is held low for more effective color contrast. Two jackets or casual coats called "Montmartre" were inspired by the old traditional costume of the Left Bank, full in cut, street length, of gold colored spun rayon and wool, and another of soft gray blue printed in deep chocolate brown. "Mardi Gras" an evening dress of light weight muslin is of a tight fitting basque with halter neck, very full flared skirt, gayly printed in green and yellow. Another evening costume called "Hacienda" is of terra cotta spun rayon printed in green. An excellent contrast in line here, with the very full swung skirt seen with an infinitesimal bolera of the same terra cotta bordered in a darker shade. Subtle and dramatic. "Frivolity" is a yellow spun rayon evening dress printed in gold and chartreuse with short bolere of darker gold. These subtle gradations made possible by Madame Polivanov's own technique are very effective. One of the most outstanding from point of view of authenticity of spirit is the short evening cape called "Medici" in white chiffon velvet printed in deep blue. Swaggering in its circular sway, it is completely reminiscent of the days of old Italy, and yet is singularly appropriate for the exciting lives we live today. This is also true of "Byzantine", a full evening mantle falling directly from the shoulders in sweeping folds of chartreuse green satin printed in magenta. The velvets as well as the rayons and muslins can actually be washed and retain their pristine glory of color. This is a thing which has been the great desire of the feminine "consumer of costumes" and it is a welcome feature also to those who design with an idea of having the work endure for some time. Magda Polivanov has brought drama to the functional in costume design.

Cape-skirt and brassiere for beach wear designed and hand-blocked by Magda Polivanov. Sea flowers, whales and waves decorate the full circle skirt in cave blue and gold with brassiere top carrying out the motif on heavy, unbleached muslin.

"Serafan" typical oriental coat-dress to be worn as coat or dress for beach, house or garden, designed and hand-blocked by Magda Polivanov in zig-zag pattern of peacock blue and chartreuse on unbleached muslin. Suede-like finish of belt and yoke accomplished through Mme. Polivanov's own dye formula.

ART IN CONTEMPORARY LIFE

By CHARLES B. BRADLEY
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Art is always the product of the life and culture which produced it. If we go back to ancient Egypt we see that the pyramids were built because of a firm belief in a life hereafter and a further relief that the spirit at sometime returned to inhabit the mortal body. This emphasis upon the return of the spirit led the Egyptians to make every effort to preserve the bodies of the dead against destruction. So the great pyramid in common with many smaller tombs was built in an effort to protect the body of the dead monarch in order that his spirit might surely have peace in the hereafter. This great tomb was then built simply because of certain ideas prevalent in the time.

If we look at Greek art we find that here also the habits of life and thought have been preserved for us in marble. The Parthenon, which is usually pointed out as the finest example of Greek architecture, symbolizes in its simplicity and beautiful proportions the habits of Greek thought. The Elgin marbles which once decorated the pediments of the Parthenon symbolize the interest of the Greeks in physical well-being as well as mental and moral. These Greeks had a very definite idea that a beautiful body should be the outward symbol of a superior mind and spirit. Their art reflects this attitude clearly and indelibly.

Another illustration of my thought may be drawn from the Middle Ages. The great cathedrals of Europe stand as the greatest art expression of mediaeval times and it was no accident that brought this to pass. The reason that the cathedral is the art symbol of the Middle Ages is that the Christian Church of that time was the only institution at work in western Europe to make life happier and more secure. In the chaos which followed the fall of ancient Rome national governments were slow to develop. Social institutions in general had not been thought of. It was the church which first founded the monastery and then in the monastery fostered the arts and crafts, agriculture and learning. Later the church gathered strength and wealth as the cities grew, built the great cathedrals as the seats of their bishops. In these cathedrals all the nerve centers of the life of that day centered. In them was born the modern theatre, through them flowed the currents of commerce and trade as well as education, politics, and religion. Because the life and thought of the day was so centered in the church it was inevitable that the art of the day should center there and should express the religious thought of the times.

In the same manner the art of the Italian Renaissance bears the marks of the reawakening of that day and the later art of 18th century France shows clearly the aristocratic atmosphere that gathered around the grand monarch whose proud boast was that he was the state. Countless other instances might be cited to illustrate the point that the art of any time and place is the inevitable result of the habits of life and thought and action of the people who produce the art.

Looking over the history of art in the past, it is clear that art has always been created in answer to some demand. Sometimes this demand has been merely felt and other times has been clearly a direct command. This situation implies that there was always a patron of art, that is, someone who either employed the artist or commissioned him in some way to produce something for which he had every reason to expect to be paid in one way or another. Sometimes the artist anticipated the demand and created something which he felt sure would be wanted and would be paid for. But as a rule, he designed a building or a statue or painted a picture because someone had asked him to do so. In these circumstances the artist was guided along safe paths and art developed in a normal, sane and natural manner, the artist ever striving to create beauty, but always guided by utilitarian and material considerations. The Madonna of fthe Grand Duke was painted by Paphael at the request of the Grand Duke. Michel Angelo painted the ceiling of the Sistine Chapel because the Pope insisted upon his doing it even against Angelo's wishes, and it was only when Lorenzo de Medici called Michel Angelo to Florence to carve the figures for the tomb of the de Medici family, that the artist was able to work in the medium which he preferred. It is interesting to note that Titian, the great painter of Venice, did not feel that it was beneath his dignity to design the costumes, the floats and the panels for the great pageants of that city. In fact we find that all the artists of the Renaissance times served in varied and sundry capacities. Leonardo da Vinci was well known as a sculptor in his day although nothing has survived of these works. He was noted as a military engineer, was a scientist and inventor, a musician and a poet and probably considered his painting of minor importance, yet we remember him today for the "Last Supper" and "Mona Lisa."

It is obvious that art produced under such conditions was made to serve a definite purpose. This we call today, "functional art." It really means useful art. From the earliest days of the cave man, art has been useful. In fact the farther back we go in tracing the evolution of art the more difficult it is to separate art from use because in its earlier stages it seems to have been employed in the decoration of tools and utensils and in ceremonials connected with various superstitious ideas. For instance, the very ancient paintings of animals found in the caves in Northern Spain are believed to have been made by the hunters of the ice ages as a means of acquiring the power to kill these animals in the hunt, thereby insuring their all-important meat supply. These paintings then were functional, or made for a purpose. In this normal development of art then there was no such thing as a division between the "Fine Arts" and the other arts sometimes called the "Practical Arts." As a matter of fact, all the arts were practical.

In the opening years of the 20th century we find art in a situation very different from that which has been described as prevalent in the past. Changes had taken place very rapidly; the French revolution, the industrial revolution in England, the spread of democracy and the post war political and social chaos. Art no longer occupied a logical position in relation to the thought and needs of the times. In order to understand this, let us examine the situation in some detail. Architecture presents the most normal situation of any of the so-called fine arts. This is because architecture continues to be created in response to demands, is still designed for a patron whether it is an individual or an organization. It seems significant that architecture has made greater progress in America than the other arts and doubtless it is because architectnre still functions in a normal fashion except in minor matters. Of course, we have frequent architectural contests and exhibits for which many designs are made knowing that the buildings will probably never be built. But in the main, the architect designs buildings for a client and is held in check by the requirements of the situation and the financial considerations. American architects have developed the great skyscraper as a real contribution to the development of their art and this type of buildings was clearly developed in answer to the needs of modern business and the ambitious spirit of busi-

ness men. The story of the development of the design of the skyscraper shows clearly the shaping influence of the life of our modern world.

Sculpture has made less progress. In the first place, the materials of sculpture are very expensive. The artist finds it impossible to carve a great statue from marble or cast it in bronze and then exhibit it in the hope that someone may buy it. The investment in time, labor and money are altogether too great. He has found a way around this difficulty in designing his statue and casting it in plaster or some other temporary material so that it may be exhibited in the hope of finding a buyer. But, in many cases, the sculptor still awaits a commission from the patron before he undertakes a creation. These material and financial considerations have both helped and hindered the development of sculpture. Helped, in that they have in many cases kept the artist with his feet on the ground and prevented his sailing off after some passing conception; hindered, in that the work of many sculptors has been definitely limited by lack of opportunity to develop their creative powers by carrying many statues through to their completion.

Painting has suffered most in recent times. About the middle of the nineteenth century science made notable contributions to the development of this art. Physicists studying light and color and physiologists studying the human eye made new knowledge available which influenced the school of painters known as impressionists. These artists strove to record on their canvases the fleeting appearance of things under changing conditions of light. In order to convey better the impression of sunlight and the movement of out-of-door air they began using points or strokes of unmixed colors which were mixed in the eye of the observer at a proper distance and so produced more vital sensations than when mixed on the palette. As these paintings often achieved brilliance and life at a sacrifice of solidity and mass appearance it was natural that some artists of independent mind should try to find means to express more form, and cubism was such an attempt. Futurism was an attempt to express movement, past, present and future, in painting and was followed by cynchronism which attempted to emphasize color by organization in moving pattern but without representation.

As the artist of the Victorian period wore his hair long and his clothes queer to set himself apart as "artistic", later the Bohemian artists of Paris claimed the freedom to break all social conventions in living and all precedent in art. These conflicting schools of art thought and technique were undoubtedly the result of not only new found freedom but perhaps more basically the result of a loss of patronage for art. The world was absorbed in science and invention and had little interest in painting. The artist lacking commissions painted pictures expressive of rebellion at a world in which art was an unclaimed orphan.

Then came the World War and the post war disillusionment. Literature, music, drama and in fact all the arts suffered from psychological troubles... Dadoism was the artist's expression of the futility of life. Abstrationism, painting in which the artist represented nothing recognizable but only an arrangement of lines, colors, or masses was a method of escape from a hated world. Some turned to primitive art found among the Congo natives or on the South Sea Islands to find something basic and unspoiled by civilization. The whole art world seemed sick and near death. The continued emphasis on the artist's need to express in some way his inner self—his feelings, rather than to picture the life about him led to the term "expressionism" as more inclusive than the earlier names of movements. The fundamental error in expressionism lies in the fact that the artist was no longer painting pictures for the layman but for himself or his fellow artists. Pictures were not painted to decorate walls of public buildings, churches or homes but to be exhibited. In order to express his inner feelings the artist often created his own language and so of course could be understood by no one but himself or his confidant. You may remember the painting which was awarded first prize at the Pittsburgh International Exhibition before it was discovered to be hung bottom up! Nothing daunted the jury reaffirmed the award after it was righted.

If the so-called "fine arts" are so out of joint with the times it is natural to ask how the artist can hope to express the spirit of the age in which we live. The answer is that he must find new mediums and forms related to the fundamental interests of our civilization. The industrial revolution and the developments of science centered the interest of Americans in the 19th century on invention and production. As wealth accumulated rapidly in this new world standards of living rose and our concern with material needs increased without any corresponding growth in spiritual or aesthetic values. The so-called "fine arts" were still divorced from common daily life and when it seemed desirable to decorate or ornament manufactured articles it was customery to borrow decorative forms originated and used in ancient Greece or Rome. This was truly applied design as it was borrowed entirely from a former civilization and applied to the products of a new one. The practice of applying ornament to manufactured articles spread throughout the nineteenth century. I well remember the dashing metal horseman that surmounted the onyx clock of my boyhood and the flourid festoons of nickel plated iron which hung to the coat heater in the living room. Historic ornament was searched for motifs to borrow and apply to materials unheard of in the days of their origin. Ornament was commonly used to conceal construction but rarely to interpret it. Furniture was machine manufactured in the styles which had originated in the days of the craftsmen and wall papers imitated tapestries or paintings.

In 1925 the Exposition of Decorative Arts was held in Paris. An invitation was sent to the United States to exhibit our wares there and this was referred to the Chamber of Commerce of the United States. But one clause in the invitation stipulated that nothing was to be shown which was an imitation or adaptation of anything of the past. It was soon discovered that so little was being produced in the United States which was original that it would be wise not to exhibit. The artist and the machine were still poles apart and art was still something which had existed in the past, but which had taken refuge in Europe or in Art Galleries. When I visited that exhibition in Paris it proved to be a revelation of a new movement already well under way in Europe. Both the buildings and the manufactured articles showed new materials, new processes and new ideals of design. From that time to this a new conception of art has been growing.

The architect Louis Sullivan had said "form follows function", and this is the theme of the new artistic decalogue. The modern industrial designer is engineer-artist-technologist and his school is the shop, the studio and the salesroom. He brings to his work the experience of the abstractionist painters who held that beauty of expression was independent of subject matter and the cubists who emphasized three dimensional design. Instead of using trite borrowed forms of decoration we now see the sheer beauty of machine finished surfaces and contrasting materials. The new design is the result of the union of the machine as the new tool of man and industry with the new art spirit which emerged from the confusion resulting from the loss of the older art patronage. Instead of paint and canvas, marble or bronze, these men work with steel, aluminum, glass, or plastics. Instead of enriching the altar of the church they seek to enhance the beauty of life in the street or kitchen.

Normal Bel Geddes designed unit gas stoves, stage sets, automobiles, sheet metal furniture, and the interiors for Pan-American transport planes. He says, "The underlying principle of the emotional response that the airplane stirs in us would seem to be the same as that which accounts for the emotional effect of the finest architecture. When automobiles, railway cars, airships, steamships, and other objects of an industrial nature stimulate you in the same way that you are stimulated when you look at the Parthenon, at the windows of Chartres, at the "Moses" of Michel Angelo—you will then have every right to refer to them as industrial art."

Walter Dorwin Teague designs everything "from a match to a city." Automobiles, railway coaches, air-conditioning equipment, caterpillar tractors, and X-ray equipment.

There are many more of these industrial artists but frequently their names are hidden behind the name of the manufacturer or the model. A list of these modern works of art

is extremely comprehensive; plumbing fixtures, stream lined trains, reading lamps, kitchen utensils, automobiles, alarm clocks, airplanes, and heating plants. Mechanical facts of construction and use are the basis for new appearance values in the products of modern factory made commodities. Beauty is not added but discovered and revealed to create sales appeal.

In 1908 Henry Ford said, "I would not give a nickel for all the art in the world," and the editor of the FORUM retorted, "His cars look it!" In 1928, after General Motors had surpassed Ford sales with "The most beautiful Chevrolet", the Ford company sought the aid of the artist in redesigning their product and in the last ten years has given increasing attention to beauty as a sales value. Having learned a costly lesson on art Henry Ford said, "Design will take more advantage of the power of the machine to go beyond what the hand can do, and will give us a whole new art."

The study of air-flow as an index in airplane design and the application of discovered principles to automobile and railway equipment design gave rise to the term "stream line." Gradually this term came to be associated in the popular mind with the new type of design in increasing evidence everywhere. So today we speak of stream lined refrigerators and air-conditioning plants, not because they are made to move swiftly but because they are styled cleanly, simply and efficiently.

The creed of the modern artist contains the following statements of doctrine:

1. I believe that that art is most significant which expresses most fundamentally the civilization which produces it.
2. I believe that art may find expression in any material, and is not limited to marble and bronze or paint and canvas.
3. I believe that true design is not beauty which is added to structure but beauty which is inherent in use, material, and construction.
4. I believe that the art of an industrial age must express itself in terms of the machine and the materials formed by the machine.
5. I believe that there is a new democracy in the art of mass production more significant to the common people than the old aristocracy of the unique in craftsmanship.

In closing we may note that this new style of art could not have been produced in any other age. Its character is distinctly geared to this age of speed, economy of production and efficiency. It may well be that future generations will study our machines instead of our paintings as the great art achievements of the twentieth century.

Zodiac Symbol for March
Designed by Ilonka Karasz

STAINED GLASS

By MURIEL DEY

Curiously, the stained glass of the twelfth century is not only the earliest of which there exists authentic record, but, in the course of the centuries this early work has never been surpassed and rarely equalled.

A SUMMARY OF GLASS MAKING IN ANCIENT EGYPT

Perhaps the greatest point in common among writers on glass is their utter uncertainty regarding the orgin of glass itself. No doubt the discovery was accidental yet there are many plausible theories.

Pliny, a later Roman writer, claimed the discovery of glass for some Phoenician nitre merchants who anchored their ship at the mouth of the Belue River. Going ashore to cook their meal they were at a loss to find stoves on which to rest their kettles and at last returned to the ship for some blocks of natron from their cargo. The heated natron made of the same a colourless liquid substance. At first amazed by this appearance, they were not unmindful of its commercial possibilities, and the wily merchants became the first fabricators of glass.

Considreing Pliny's tale scientifically, A. Sauzay, who writes on glass from an historical and practical point of view, says that sufficient heat can not be generated in the open air for the manufacture of glass. At any rate, the two elements, sand and natron were present.

One can not assign catagorically a country and date for any thing as indefinite as the origin of glass. It may have been understood by many primitive groups of whom we have no record. China does not claim to have devised glass objects until 200 B. C. and there are many facts which H. Rawlinson says that the "accident of glass is more likely to have occurred in Egypt because the soil contains an abundance of natron (sub-carbonate of soda) as well as of sand." Certainly the findings of archeology suggest that the Egyptians were long aware of its possibilities.

There are many ways in which the vitrification of sand might first have been noticed. It seems quite probable that workers of metal might have noticed that a brilliant turquoise colour was made when particles of melted sand came in contact with copper. Or, workers in clay might have experimented to find a substance which would give a more permanent finish to their vessels.

It seems more logical that pottery should have been devised before glass, and that glaze resulted from an attempt to find a durable surface for pottery. If this were true the craftsmen soon discovered that the glass paste or glaze had sufficient body to be used independently.

It has been suggested that the discovery of glass was made by the priests in their laboratories and that they kept their processes secret. Imitations of precious stones were made of glass and to such a degree of perfection that we cannot now be sure that we can distinguish between real and false gems.

From the few specimens of glass existing today it is very difficult to reconstruct the history of the craft for the fact that specimens have not been found does not prove that they never existed. Another confusing element is that for an unknown reason articles of glass were not dated or monogramed as much as objects in other media, thus making chronology more difficult.

Glaze and glass have an almost identical chemical content. If we are willing to consider glazed tile as a possible forerunner to glass, it is significant that there are numerous specimens from predynastic Egypt. Among early glazed objects which can be definitely dated are a glazed vase bearing the cartouche of Menes, first dynasty, and the glazed tile used on the step-pyramid at Sakkara in Aozer's reign.

From the glaze in which clay objects were dipped, beads were, no doubt a subsequent development. A fine rod of hammered bronze was dipped into the molten glaze and twirled around rapidly until cooled. The ball thus formed could be slipped off the rod which contracted when cool. Cylindrical beads known as bugles were made of a tube of glass cut at the lengths desired.

Glass beads are by far the most widespread and most frequently found objects, since they were used as coins. They were usually of opaque glass in many colours and represent varying degrees of skill in manufacture. Most of the early beads give no clues to date or place of origin. They were in common use, by the fourth millenium B. C. One of the earliest beads bearing a cartouche of one Nauanter LV B. C. 2423-2480 is made of glass which time has changed from a brilliant blue to an olive green. A lion's head was inscribed upon this bead found at Thebes.

Another bears the inscription of Queen Ra-na-ka whom we know as Hatshepsut but most of the beads are not dated.

Beads were prized for their colour, stringing beads was a child's pastime then as now. They were made into necklaces and collars, fringe for clothing and headdresses. Some of the mummies are covered with a fine network of beads over the linen wrappings often in a colour pattern.

The Egyptians did not aim to make colourless glass and sought primarily to imitate the hues of precious stones. Crystal was taboo and objects carved from that material were dipped in glaze. Common glass is said to have been made in imitation of precious stones. Indeed, Pliny calls this "a far more lucrative deceit than an ydevised by ingenuity of man." The colours possessed a rare brilliancy and the workers copied with astonishing perfection the characteristics of the natural stones.

Copper was used extensively as colouring matter. Turquoise blue is dominant colour in glass and glazes of all periods. Because genuine stones in blues and greens were rare, glass was employed to make up this deficiency. The characteristic

Designs for stained glass windows are first made to scale. Style and suitability to the architecture are important.

The desired designs are made actual size with charcoal. From these, painters reproduce them on pieces of glass.

glaze is made of a sillicate of soda, lime and copper. Intensity of colour is governed by firing temperature, the lighter tints made from hotter exposure. Cobalt is used in semi-transparent blue glass.

The greens were not as brilliant as malachite. A copper content is found in some of the pieces analyzed. Either the brighter greens could not be made or there was no demand, if we may judge from the few specimens which have come down to us.

Jasper was imitated and copper again used to produce the red. One vase contained thirty per cent bronze. Transparent ruby tints were not perfected until the medieval period. Red glass seems to have been used almost exclusively for inlay. Probably this is so because the red has a strong tendency to become oxidized, the rich effect of the colour would be lost in the exposure necessary while working with other colours.

Purple was derived from manganese and used in glazes of the first dynasty. This also is rarely used with other colours but used as inlay. Manganese is used for brown also, though the colour was not employed extensively.

For yellow, next in poularity to turquoise, the metallic content was probably iron. Egyptian yellow has not been carefully analyzed but it is quite probable that they used, as did the Chinese, an ochrous earth with oxide of antimony.

Lead of tin produced opaque white. A brilliant orange is found in Egyptian glass of the later periods.

The imitation of precious stones seems to have been of more consequence to the glass workers that the making of vessels. Expert resemblance to amythyst, emerald, sapphire, lapis lazuli, jasper, carnelian and diamond were produced by the Egyptians.

Probably the next step beyond the manufacture of beads and gems was the making of small vessels of glass used to contain perfumes and other valued liquids. Before the blowing iron was devised vases were probably made over an iron tube to which a bag of sand was firmly tied in the shape desired. Molten glass was poured on the metal and sand bag, while in a liquid state other colours were introduced in a zig-zag or crescent effect produced by the hardening glass. The object was kept in motion until the shape became definite. As it cooled the metal contracted and could be removed, the sandbag punctured and emptied. In this process the metal served only to shape the neck. It is thought that as the workmen developed in skill they saw that the sandbag form was unnecessary. The vitreous substance could be blown through the tube by the hand or by bellows.

The discovery of the blowing iron is to glass manufacture what the potter's wheel is to that of pottery. With this device the glass objects could be made much more easily and its increased use was consequent. The blowing iron is simply a long hollow tube. A mass of molten glass is fixed on the end and is shaped by the amount of air which is blown into the glass. The general appearance of the object as well as the thickness of the walls is determined by the force of air applied. The glass may be reheated when it cools.

Glass blowing is represented in paintings from the Twelfth to the Twenty-sixth Dynasty. Some controversy exists, however, regarding the so-called "Glass blowers of the tombs of Beni Hasan." These drawings are dated about 2000 B. C. Maspero suggests, and he is accepted by Dillon, that these figures represent some stages in metallurgical processes. They place the introduction of the blowing iron in the Roman period of Egyptian history. It is true that there is very little evidence of early blown glass, and that there is almost no means of assigning accurate dates for the pieces now in existence.

To place the date at the time of the Eighteenth Dynasty is very conservative. We have many lines of evidence to show that glass making was an important industry at that time. Important papyri have been found at Tell-el-Amarna which record the commercial activities of Iknaton. Glassware is frequently mentioned and in such quantities that it is unlikely the primitive process was still employed. Exportation of Egyptian glass prized by traders for the inhabitants of nearby countries was a venture by which the Iknaton hoped to restore depleted finances of his realm.

National glass works have been found that were in full operation during the time of the great Theban dynasty. Huge piles of scoriae mixed with slag yet mark the spot where furnaces were stationed at Tell-el-Amarma, El Kab and at Tell-el-Eshmeneyn. Molds of terra cotta, stone and lime stone have been discovered.

Mounments of the Fourth Dynasty contain frequent drawings of wine bottles. These are thought to have been in general use. This kind of bottle is found among offerings to the gods and fetes of individuals wherever wine was used from the earliest to the latest time. It was one of the principal uses to which glass was applied by the Egyptians, excepting the beads already mentioned. Wine was frequently brought to table in a bottle or handed to a guest in a cup of this material.

Many lines of contrasting colour were the principal decorations of early glass ware. The forms were kept simple. More variety in shape was possible with the use of the blowing iron. Many of these had very long necks and elliptical bodies.

Certain objects may be cited as significant in tracing the development of glass work, in its more advanced stages.

Goblets, seven in all, found in the tomb of the Princess Nesikhonsu at Deir-el-Babau are of the three most common types; plain colours, light green and blue, spotted black and white, and multi-coloured frond decoration. Another example is a light blue, semi-opaque ionochoe, having a larger rim and substantial handle. The decoration is of the familiar bands and fronds. A miniature amphora has the pointed base and placement handles often found in Grecian pottery. In addition to the vessels and utensils, glass was employed for innumerable trinkets—bracelets, armlets, earrings in shape of discs, rods, plaques, figures of god and goddesses, men and animals. Eyes and eyebrows were made of glass to give a more realistice aspect to stone statues, and the Egyptians also made glass eyes which were said to be very perfect imitations, for soldiers or others who might need them. Incisions on stone sarcophagi were frequently filled with glass. Occasionally the whole sarcophagus was covered with transparent glaze creating a rich appearance and at the same time sealing it permanently.

Strabo and Herodotus mentioned the colossal statues said to have been made of a single piece of emerald—a pillar on the temple of Tyre in Phoenicia C. 2755 B. C. was said by Herodotus to have shone with a beautiful brilliance at night. This might have been carved out of rock crystal and covered with a glaze, or it is conceivable that a huge mold might have been made for this vast undertaking. The colossus of Saraphis in the Labyrinth was thirteen and a half feet in height. Great skill was required for the intricate patterns made of glass mosaic and inlay works. Pictures of glass, made of tiny pieces fused very skillfully display the craftsmen's minute workmanship. The Egyptians understood glass cutting, engraving and grinding. Pliny mentions that diamonds were eagerly sought after by lapidaries who set them in iron handles. Emery powder and the lapidary's wheel were also used. One of the finest examples of workmanship is that of the plaque made by fusing rods of glass into the Amenemhet cartouche with such accuracy and delicacy that wherever the glass is cut through, the design is identical even when closely scrutinized under a magnifying glass. This process recurrs in the famous Millefiori glass of Italy. Wilkinson summarizes their prowess. "The manner in which the colours are blended and arranged; the minuteness of the lines, frequently tapering off almost to an imperceptable fineness and the varied directions of the twisted curves, traversing the substance but strickly conforming to the pattern designed by the artist, display no ordinary skill and show that they were perfect masters of the means they employed."

ROMAN GLASS AND MOSAICS

As we have noticed, glass objects in Egypt were, for the great part, on a very small scale. One is surprised to notice in a collection of glass how every tiny most of the Egyptian things are. It may be that only this type has remained to us. Climatic exigence did not suggest the use of glass in windows in Egypt or in Greece. They seem not to have made

The artist traces the delicate features and garments as shown in the full-size drawing. The color is applied. This fuses with the glass in the kilns first firing is about 1300 degrees Fahrenheit. After which the window is removed and given a second shading. Then comes another firing of 1200 degrees and a final firing of 900 degrees. The color and lines now become an indeliable part of the glass.

it into flat sheets except as it was required for tesserae in mosaic work. Here bits of glass were made in imitation of more expensive materials, or to complete a deficiency in the colour range, mosaic was a favoured floor and wall decoration among the Egyptians. Greece was preoccupied with its ceramic wares so there is very little glass in the relics of their civilization. In fact they did not even have a word for it, using the awkward phrase "melted stone." Rome, however, was fascinated by the glass work of its Egyptian colony. Part of the yearly tribute was to be paid in glass. The Romans even transplanted some of the workers to Rome and built furnaces there. Vases of unusual beauty have been found in the tombs as well as frequent mention of glass objects in the documents of the period in evidence of its extensive use. Glass mosaics were coveted decorations and to adorn one's house with them was a mark of refinement and affluence. Pliny describes some of them, awed by their magnificence. In addition to geometric motifs, the tesserae were combined to represent scenes and objects. The famous mosaics of this period such as the Battle of Issus at the House of the Faun in Pompeii, are composed mainly of marble with some cubes of glass. Gold leaf was used to back transparent pieces—and it produced a glittering effect.

The Romans undoubtedly used glass for windows, though by no means exclusively, mica, alabaster and shells having also been used. Glass in flat pieces has been found in the ruins of Roman houses both in England and Italy and in the House of the Faun at Pompeii a small pane in a bronze frame remains. Glass of this description seems to have been cast on a stone and is usually very uneven and full of defects so that although capable of transmitting light it must have admitted only an imperfect view of external things. When window openings were large, as in the basilicas, glass was doubtless fixed in pierced slabs of marble or in frames of wood. Small panes of glass were set in bronze, copper or even leaden frames. Returning to mosaics for the influence they might have had on the later stained glass, we notice that there are but few in the catacombs. Two are portraits of pious Christians, while in the catacombs of Caxitus an arch which surmounts a sarcophagus is decorated by a mosaic representing Christ with Saint Peter and Saint Paul, in the cemetery of St. Hermes, Daniel in the Lion's Den and the incident of the paralytic and the Raising of Lazarus are represented. An impressment of pagan themes for Christian subjects is characteristic of the subsequent mosaic decoration. Mingled with the classic themes are noticeable Byzantine influences in the establishment of this new iconography. The metaphor of the Lamb is prevalent, as also the establishment of the four animal symbols of the evangelists, and the frequent representations of Bethelehem and Jersualem. Mosaics of the Church of Santa Costanza, Sau Pudenziana and the Lateran are important in this period. Later examples are at the church of the Daurode at Toulouse, San Ambrosio, Milan, in Rome; Church of Saint Sabine, the Basillica of Saint Maria Maggiore, the Basillica of Saint Paul outside the walls, Oratory of Saint John the Evangelist, of St. John Lateran; at Ravenna, the Mausoleum of Galla Placidia, the Baptistry of the Orthodox, the Chapel of the Episcopal Palace, the church of St. John the Evangelist. One would like to know if the mosaic workers themselves wished to make a translucent screen of their tesserae instead of setting them in cement and thus devised the lead strips to hold the ieces together, anticipating our stained glass. There is no definite proof of this theory except the obvious similarities in the two arts. After all, the connection between stained glass and mosaic is not much closer than the relationship among the other allied arts. They all had the same themes, and varied in the manner of translation to their own media. The study of mosaic design is interesting as it formed a definite part of the artistic background of the glasswork.

There are many reasons to substantiate the extravagant claims made for the supremacy of the early medieval stained glass. Every writer on glass points to the twelfth and early thirteenth century windows as incomparable. Henry Adams writes "Viollet-le-Duc and M. Paul Durand, the government expert, are positive that this glass (that of the west facade of Chartres) is the finest ever made, as far as record exists, and that the northern lancet representing the Tree of Jesse stands at the head of all glass work. The windows claim, therefore, to be the most splendid colour decoration the world ever saw, since no other material, neither silks nor gold, no opaque colour ever laid on with a brush, can compare with translucent glass and even the Ravenna mosaics or Chinese procelain are darkness beside them." The early Chartres windows are referred to as perfect and irreproachable. This is what Mr. Arthur Kingsley Porter says of the Chartres windows: "Lovelier colour the hand of man has not produced. There are times when human art seems to be something more than mortal; when it rises to heights infinitely above the ordinary achievements of men. French glass of the twelfth century is such an art. It is impossible to stand in the presence of these translucent mosaics without experiencing a depth of aesthetic emotion that at once disarms the critical faculty. Such sensuous beauty of tone, such richness of colours, has been equalled by no painted of the Renaissance, by no Byzantine worker in mosaics. Yet it is not only for their absolute beauty, but also for their perfectly architectural character that these windows claim unqualified admiration." Perhaps we can, in a measure, analyze the charm of these early windows. First of all, they are perfect decoration. They are completely resigned to being a part of the wall and have agreed to make the most inexorable circumstances—they will be good windows. Whether by accident or design, the medieval glass worker refrained from employing the laws of persective. He kept his surface flat and produced, thereby, a "comfortable sense of enclosure" which was conducive to ecclesiastical thoughts. He knew that the cathedral was deserving, demanding his best work and one can not but sense the secret pleasure he felt in creating these lovely windows of his finest glass. Returning to Mr. Adams, whose regard for Chartres amounts to veneration, we read: "The glass window was to him a whole, a mass, and its details were his amusement." Again, "If the Tree of Jesse teaches anything at all, it is that the artist thought first of controlling his light, but he wanted to do it not in order to dim the colours; on the contrary, he toiled, like a jeweler setting diamonds and rubies to increase their splendor." The second reason for the excellence of the twelfth century glass is the superiority of the glass itself. The colour was never surpassed and at no time was it used to better advantage. Rough and uneven in texture its very crudeness brought about prismatic effects and added enormously to the brilliancy of colour. Again the description, "imprisoned sunlight," is applicable. As for colour, the uneven tone, the streaking then unavoidable in pot metal is the secret of its depth and richness. One should mention especially the rich ruby of this period which was later a lost art, and the marvelous deep blue of unbelievable quality. The scintillating effect of the windows is due to the skill of the craftsmen (the third reason for the supremacy of the twelfth century glass) who enhanced the beauty of the glass by their wise juxtaposition. Translucent colour was the glass worker's medium. The glory of this colour was never dimmed save when it was necessary for the larger effect of the whole composition. His design relied upon action and rhythm and not upon such superficialities as facial expression. He told his story with a fine poetic sentiment and in the course of his tale he was naive, quaint, often piquant but always sincere in his direct, unstudied manner. He succeeds in being charming while he only intended being frank. Because his designs grew out of the glass itself they seem inevitable. His precept in working was craft-convenience so his technique belongs to his medium. And to the humble craftsman who inconspicously offered the best of his work for the greater glory of his beloved cathedral, we are indebted for these works of disarming beauty.

THE GLASS ITSELF

The glass was made in forests. Crude furnaces were erected convenient to the source of wood supply for a great deal of fuel was needed in the process. As they exhausted the supply of dried logs the glass makers moved to another part of the wood. Their position brought them royal patronage for while the kings were hunting in the forests near Paris they visited the glass men and were fascinated. Very little remains to

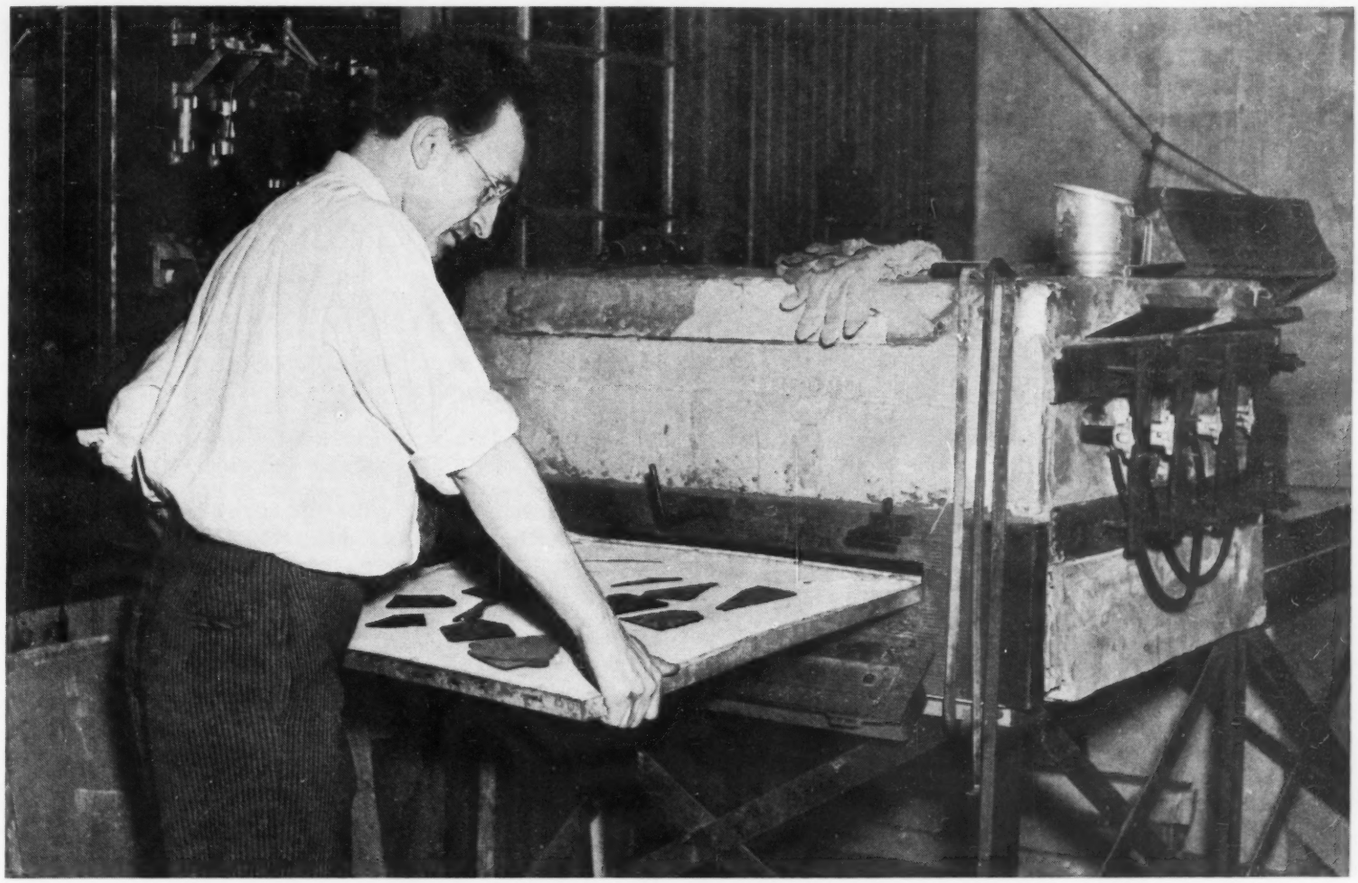
Cutting the small pieces of glass is done by first laying a sheet of heavy paper on a table, superimposing carbon paper, and then placing the full-size design on it. An agate is run along the lines which are to be "cut" lines These are then cut out allowing necessary space for lead joiners. They are fastened to a sheet of plate glass with bits of beeswax. The pieces of glass are then cut.

tell us of the manner in which the glass for the glorious twelfth century windows was made. One manuscript reads: "To make glass add ten parts of alkali to ten of sand, grill the mixture in an oven until it is clean as wool. Heat in a crucible till the substance can be drawn out like gum, then make of it what you will—cups, bottles, boxes as the Lord may permit." By far the most substantial information comes from the writings of one monk Theophilus who lived in the second half of the XII century, at least the recipes which he gives and the taste of ornament which he prescribes seems to indicate that date. He was from the monastary at Helmershausen not far from Paderborn in the old Saxon land and his work, Schedula Diversarium Artium treats of the processes of several crafts. It begins "Theophilus, an humble priest, servant of the servants of God, addresses his words to all who desire by the practical work of their hands and by the pleasing meditation of what is new, to put aside and trample under foot all sloth of mind and wandering of spirit . . . ." In his second book he treats of glass and the preparation of stained glass for windows. All the parts of the furnace were grouped compactly and served by one fire. The glass itself was made of two parts beechwood ashes and one part clean sand. "The mixture is roasted in an upper hearth and stirred with an iron trowel, so that it may not liquify, for the pace of a day and a night. Note here that the ashes of beechwood are used directly without any previous lixivation; such ashes would contain, besides alumina, more or less lime and silica, and these substances would pass into the glass . . . The glass pots, conical in form were filled with the frit in the evening and a fire of dried logs kept burning all night." Dillon thus describes the next stage in the process. "In the first case the fistual, or blowing iron is dipped into the molten metal and turned round so that a mass of glass gathers on it. You blow gently through the tube, beating the glass at times against a flat stone that stands by the furnace. You heat again the lon gvesicle of glass and with a piece of wood open out the aperture which now appears at the extremity of the full width of the glass tube. We have here a primitive method of forming a cylindrical manchon. The cylinder is now reheated in what is apparently a separate oven—the dilating oven; it is slit lengthways and opened out with an iron forceps and a piece of wood. When the glass has been smoothed out into sheets it is taken to the annealing oven, where the sheets ar ranged on end against the wall and gradually cooled." Theophilus does not present the instructions for making these objects as if they were a novelty. His treatise, on the contrary, denotes a long practice in the methods of translucid painting, and the glass which we still possess dating from this is, in execution, of such perfection that one must infer a long experience has made possible this development of an industry the methods of which are passably complicated.

The glass was coloured by metallic oxides which were infused while it was in the molten state. This type is referred to as potmetal. Cobalt was used for the blues, or more particularly, "blue extract of arsenic sulphates of natural cobalt." Nickel was eliminated to avoid the brown shade and dark effect. Copper was then added, about ten per cent, the greenish blue of which corrected the too-violet blue of pure cobalt. The famous ruby red, which became rarer after the thirteenth century until in the seventeenth the secret was entirely lost, was produced by the partial reduction of a small quantity of suboxide of copper, but in this case the colour only developed on reheating the glass. The more purplish tint given by a somewhat similar treatment with gold was not known to he medieval glass marker. Yellow could be made by merely boiling the mass until it reached the shade desired just as sugar turns yellow and brown when heated. For green, they boiled white glass for five hours until it became yellow; then, as with the blue, a certain percentage of blue extract of arsenic sulphate of cobalt was added to the formerly white glass which in the course of half an hour turned into a light green. The glass maker removed what light green he wanted and for darker put in more blue and let it boil another hour. Purple is rare because the outstanding qualities of the red and blue supplied this part of the colour range. It could be made from natural unpurified ore of manganese." The encyclopaedia definition of strained glass is "glass coloured by such method as the fusion of metallic oxides into the glass, the burning of pigment into the surface of white glass or the joining of white with coloured pieces of glass." The latter type is spoken of as "flashed" glass. Lo a basic sheet a thin layer of glass or transparent enamel is applied in a manner which is not unlike a layer cake when seen in cross-section. Flashing is used extensively in red glass, over a base of clear or white, bottle green, blue, violet or amber. Of course the base qualifies the resultant colour. The fiinished glass was packed in leather bags called "bouges" and taken to centers of the nitrine industry on mule back. It is little wonder that when it arrived the glass was in small irregularly shaped pieces. In the earliest work the largest dimension of any piece is not more than six inches. The size of the pieces of glass varies in direct proportion to the age of the window. Theophilus tells how to proceed to make a stained glass window. "First," he says, "make a table of planed wood and of such width and length that you are able to trace thereon two panels from each window." The table was white washed and the cartoons sketched in roughly the final lines being marked with a heavy pencil. These lines were closely followed in cutting out the individual pieces by means of a hot iron. The diamond was not used until the sixteenth century. Theophilus does not say clearly whether he indicates on the table (which we call cartoon) the complete modelling of the figures and ornaments . . . Upon these pieces of glass the modelling is no more than a following of strokes in accordance to the meaning of the form. The very things which we think of as imperfections are responsible for the rare quality of the medieval glass. It was utterly impossible to duplicate the colours exactly. One of the old recipes for red bears the suggestion that if the anticipated results do not accrue, take it out and use it for flesh colour. Only by hazard were some of the finest shades attained and they were induplicable. Even today when a scientific formula is employed by glass makers, vessels of different sizes will produce different colours, from identical ingredients. But the variation in the colours only served to enhance the finished medallion. Streaks existing in the separate pieces give more depth and richness because they set up different vibrations in the light waves. The bubbles in the glass and the rough, sometimes horny surfaces catch the light, justifying Professor Moore's phrase, imprisoned sunlight. Perhaps the chief difference between medieval and modern glass is that we think in making a smooth clear glass we have a better product, than the rough crude work of the so-called Dark Ages. The result is that one merely sees through the modern glass as through a transparency or gelatine paper. There is nothing to catch the light and cause the refractions which are the wealth of the older glass.

THE GLASS WORKERS

One would like to know more about the glass worker himself. Unquestionably he was an artist. His love of colour and his joy in his work seems to radiate from his windows. Even though the chemistry of the colouring were empirical and the laws which governed the wisest juxtaposition of colour were probably never written down, the glass itself is ample evidence that the twelfth and thirteenth century craftsmen were masters. The so-called Dark Ages are really murky on the subject of glass. This product was a part of the lore of the alchemists and was kept chiefly in the counterfeiting of more valuable gems. Charlemagne's chronicles mention glass windows but our idea of them is most vague. It is probable that the craftsmen in the monastaries are responsible for the earliest use of glass in ecclesiastical structures where it has always seemed most at home. The small pieces in which glass was necessitated made the devising of leads. It takes little imagination to see that some artistic person would be intrigued by the possibilities for design in the bright colours enframed in black—and his fellow-worker might pause from his mural paintings long enough to make some experiments with pigment on glass.



After the firing, the pieces of hot glass are cooled slowly before they are soldered together by expert glaziers.

The joints must be carefully fitted together on both sides and later made waterproof with slow process.

AN ARTIST OF THE PEOPLE

By DORIS KIRKPATRICK

Every time I see an exhibit of modern American art I think of the artists of Germany. During the year we were in Germany I haunted the shopping section of Berlin, looking for modern art. In big streets and little back streets, wherever a dealer's shop might be hidden away, I looked in every window of even the smallest shop. There were always reproductions, beautiful hand-tinted reproductions of Rembrandt, Michael Angelo. But in the windows little that was modern, save, now and then, an indifferent, mediocre landscape. Blut und Boden. Hitler thought of himself as an artist. It was said that he had little talent but after a fashion he had studied art. Art was not a political weapon. In his speeches he always had a word to say.

"Art is the great mainstay of the people because it raises them above the petty cares of the moment and shows them that after all their individual woes are not of much importance. Even if such a nation should go down to defeat and yet have produced cultural works that are immortal, in the eyes of history that nation will have triumphed over its adversary."

Suppose National Socialist Germany should go down to defeat as nations have before, what immortal cultural works would survive its passing? There must be artists, somewhere, I thought. I went in to talk with the dealer.

In the shop I stared at yellow wheat fields and glorified peasant maidens and at portraits of Hitler. In water color and oils he was pictured in Napoleonic pose, the great man and conqueror in uniform, or as a mystical St. George riding a white horse, the adored savior.

"Is that the way to get started in the artistic profession?" I said to the dealer in jest. "Does painting portraits of Hitler open the way to fame and fortune?"

He nodded his head. "It is helpful," he said seriously.

I visited a National Socialist exhibit. Here was Blut und Boden come into its own. Landscape after landscape. There must be one among them—eagerly I traversed the marble hall. But they all looked like the paintings of children and not children who see with the fresh and innocent eye but children who were flat and unimaginative replicas of stupid and insensitive adults.

"Are there no painting of people?" I asked the attendant.

He showed me portraits of National Socialist leader, stiff, glorified and stickily inhuman.

"But the figure," I said, "the human figure?"

"Ach nein," he shook his head. "To paint the human figure is verboten. Our leader wishes to save art from Jewish corruption."

At least the National Socialists cannot have intruded upon the past, I thought as I climbed the steps of the Palace of the former Crown Prince on Unter den Linden where is housed the modern art of Berlin. Here I should find what I wanted to see. As I walked through the modern rooms I saw to my surprise that all of the paintings had been arranged into categories. (1) Pictures of Home Love and Family Life, (2) Children, (3) Soldier Life, and so on. The ludicrous combinations with no regard for either style or time made me burst out laughing. The solemn guard in the corner eyed me stonily.

In one room I stopped short to look and look again. Here was a whole room full of paintings by one painter. There was a picture of a prostitute in a red dress. Her bleeding arms were bound together in back and there was a crown of thorns on her head. She was flanked on one side by a doctor and on the other by a soldier. Another showed a Trojan Horse being dragged into a city. They were painted in a strange wild sort of way as if the man had thrown the paint at the canvas in a frenzy. They were composed with the most enormous vitality. No Blut und Boden here. These pictures were painted by a free spirit. A self portrait of the painter caught my eye and I looked at it with interest. His ruddy strong face under a battered old slouch hat looked proud and intelligent. So might Whitman have looked in his early youth, his eyes full of power, treading the earth strongly and unashamed. Not one to easily Heil.

On the way home I stopped by in Nollendorfplatz to see Frau Kreise, a friend of mine who was a painter. She was hard at work in a clean white smock, her hair waved and set, her room spotless.

"I've been to the Palace of the Crown Prince," I said, sinking down in a blue velvet chair and looking at the picture on the easle. She must be hard up to be trying to paint a Blut und Boden landscape.

She splattered blue on romanticized Maxfield Parish mountains. In the foreground a brown Swiss chalet worthy of a calandar hung over a flowering field.

"I saw some pictures I liked," I went on. "A whole room by the same man. They were big as barn doors. Two of them, a Trojan Horse and a Girl in Red, are astonishing. Do you know him?"

"Yes, I know him," she said, a strange look passing over her face.

"What kind of a reputation does he have in this town?"

"The best," she said.

"I was surprised to see his pictures hanging there. Where is he? What's he doing now?"

She laid down her brush and turned her face away from the Blut und Boden mountains.

"He is dead," she said in a hard voice. "He shot himself."

One evening we were dining with a friend. After dinner I picked up a book of etchings lying on the table and casually turned the pages. I held the book up and looked at a peasant woman holding a child in her arms and a quiver leaped along my spine. Neither the woman nor the child were beautiful but they lived. The lines were powerful, vigorous and with a terrible certainty such as one associates with Michael Angelo. In a trance I turned the pages. There were the children I had seen on the streets, their starved thin faces, there were the coal men, the peasants, hunger, death, terror and love stalked through the pages.

"Who is this artist?" I asked in excitement.

"Kathe Kollwitz, one of the greatest artists in Germany," came the answer.

"Or in the world for that matter," I said.

Was this art or was this propaganda? I did not know. One thing was certain. The critics might protest her subjects but they would be forced to admit her masterful technique. But I did not believe it was technique alone that had taught her fingers the way to go. Only a deep passion could have pictured such an intense burning reality.

In a frenzy I began to look for a Käthe Kollwitz. One day in an Antiquariat, a junky little shop in which old books, glass, jewelry, all the worn out finery of both aristocracy and proletariat come to a final resting place, I was rumaging through some old prints pretending a casual interest.

"Have you any Kollwitz?" I enquired cautiously.

"Ach, nein," the dealer shook his head.

"The greatest artist in Germany," I said in scorn.

"Yes," the dealer agreed apologetically, "a fine artist. But she is old. New times have come. Allow me to show you som eof the modern work."

"I understand there are books published containing reproductions of her pictures. Can you get one for me?" I persisted.

"Perhaps." He shrugged his shoulders.

"Can I order one?"

"It is difficult. Will not the gnadige Frau look at the fine reproductions of the classics?"

"I am interested in buying a Kollwitz."

"So and so might have one."

"Twenty dealers have told me that."

He sighed, scratched his nose thoughtfully, looked around the empty shop and then stooped before a tall cabinet of drawers. He opened the bottom drawer and from underneath a large pile of pictures he pulled out a Kollwitz and thrust it toward me. "It is cheap," he murmured sadly.

A moment he leaned over my shoulder and looked at the picture in pain. Then he snatched it from my hand, wrapped it quickly and handed it to me as if it were dynamite.

"Bitte Schön," he threw open the door for me as if he could not too quickly see me out of his sight.

I discovered that Käthe Kollwitz was in Berlin. I had the luck to find her address and I wrote her a little note in my bad German asking if I might come and see her pictures. I received a gracious answer. Would I come at four o'clock on Thursday?

When I came up from the subway into the north of Berlin I stepped out into a slum area. I walked all around through the hot little park and up a hilly street where I saw children sitting on the sidewalk with their feet in the gutter. They all had bare skinny backs and legs and were dirty and scrawny, their bones sticking through the one inadequate garment. The streets smelled of raw fish and stale unwashed flesh. I went in a cafe and ordered a glass of milk and an egg. The tablecloth was dirty, there was dust in the milk, the white chairs were dirty, the place swarmed with flies. The unshaven sullen looking thugs in sweaty shirts with no coats or ties were talking in low tones in back of me. I tried to swallow down the milk. This was the neighborhood in which Käthe Kollwitz chose to live!

I walked on up the street to number twenty-five. I went in and saw the dirty smelly hall and the worn stairs and the plaster peeling off the walls. I went up the stairs preceded by an old poor woman who stopped at a door that I saw was a doctor's office. She put up her hand to knock, and I stopped still looking at her. Her hand upraised to knock, her curved head so humbly bent, her ravaged face—these were familiar. Where had I seen this woman before? Of course! Käthe Kollwitz's picture in the book I had seen that first night! Was there no escape? Something had driven me away from the streets, from the people I could no longer look at without horror to the search for the artist who alone could lift the hot unbearable personal life onto some timeless plane where it could be borne. I had come to see Käthe Kollwitz. I did not want to look at this woman! I felt my flesh creep as if the edges of the world around me began to crumble a little. Softly the door closed on her and I stood staring at the wooden panels.

I went on up the stairs to the next floor and a young girl opened the door and let me into a dark hall. I stood in the hall blinking and I looked up and there was a small old woman stretching out her hand to me. I had not expected her to be so small, not as tall even as I, and not stark and strong and stern but just a sad old woman with snow white hair, stoop shouldered and her stomach projecting out as if she had a tumor. How ugly her face was, yet kind. But I shrank away from her eyes. They looked at me penetratingly, they stripped everything away so that nothing was hidden. It was like standing in a merciless white light.

"It is kind of you to come," she said in a deep gracious voice and led me into a room with very ordinary dismal German furniture. An old brown stove huddled in the corner and a massive table with a faded orange chenille cover absorbed the center of the room. She motioned me to sit by the table. I sat down in a hard kitchen chair and opened my mouth to speak.

"Forsichtig!" She put her fingers to her lips. In a slow deliberate way she swung to the large window and fastened it. She stooped over, pulled the telephone connection from the wall and put it in another room. She came back to the table and sat down. "It is necessary to be careful," she said.

"But surely, a person of your fame—"

She shook her head. "My mail is censored. I receive no visitors. They watch all who would come to my house. But you are a foreigner, they will not question you."

"I have come to see your pictures," I said, choking down the violent words in me.

She brought them out and spread them all around on the floor and I walked around looking down at them, pictures and more pictures, covering the floor, filling the room with their dark and terrible disaster. Pictures of peasant women holding children in their arms, trying futilely to protect them from hunger. A picture of a woman with her back turned and her head bent and three small children with their mouths open, their faces gaunt with hunger clutching at her skirts. The name of the picture was BROT.

"That was in the time of the blockade," she said, "when thousands of German children died of starvation."

I turned my head away from those open-mouthed children and bent over another picture.

There were two peasants, a man and a woman in rough clothes holding out to a child a little cup of milk they had got somewhere. You could see the hunger in their faces and their joy in giving to their child. I stooped to look long at the picture of a man plowing, his body bent almost to the earth, in his face that dull look, that look of a man turning into a creature less than an animal in his insensibility. Art is the clearest and most immediate reflection of the spiritual life of a people, said Hitler. I looked at the brutish face. The spiritual life of Hitler's Germany!

I kneeled to look at a picture of a mob led by a peasant woman with arms upflung. I felt as if a violent wind were sweeping me off my feet.

"I first saw Hauptman's Weavers Revolt in 1893," she said. "For four years I struggled to put down what I felt about it."

"Are there more?"

"Seven sheets. I took them to my father on his seventieth birthday." She smiled. "I well remember the day. He ran out to my mother in the garden and shouted, 'See what our little Käthe has made!"

"What a joy for him to see your success."

She shook her head. "He died before I became well known. It is perhaps as well. The criticism would have been hard for him. My pictures you know did not always find favor. The silver medal was proposed for my work in an exhibit but the reward was denied by Kaiser Wilhelm II. The Kaiserin too was never fond of my pictures of poverty. In 1906 she refused to attend an exhibit unless a plaque of mine was removed."

In silence I looked at the closed window.

The young girl who had let me in came in with a cool raspberry and we sat down at a little tea table.

"Are you a native of Berlin?" I asked sipping th edrink thirstily. It was lukewarm. So Käthe Kollwitz had no ice either!

"No," she said. "I was born in Koenigsberg, the home of Kant July 8, 1867. My father was a liberal. He had great sympathy for the people. As a child he read to me Hood's Song of the Shirt."

"Did that inspire you to draw the people?"

"No," she said thoughtfully. "I did not draw until I was fourteen. The first thing I drew were the barge men."

"I have seen them too." I set down my glass and carefully wiped my lips.

"Did you study at home or did you go away to school?" I asked.

"I studied in Koenigsberg with Mower , a copper etcher who let me draw from plaster cast and who taught me etching. When I was seventeen my father sent me to Berlin to study with a Swiss, Staufer-Bern, who conducted drawing in a school for women artists. Then I went home again."

"You wanted to be by yourself?"

"Yes," she nodded her head. "I drew the poor people, the harbor workers and their quarters."

"In America we always think of Munich as the artists' Paradise," I said.

She smiled. "As a young girl I enjoyed Munich," she said. "I had many friends among the French Impressionists. But their life was not mine. I always had to go back home again where I could work in freedom.

"You married young?"

"In 1891 I married Karl Kollwitz. I was twenty-four and as a bride I came here to this house. In this house my sons were born, my life was lived. I am an old woman now, over seventy."

"And in all that time you drew only pictures like this—" I waved my hand toward the pictures on the floor—"of the people?"

"Yes," she said heavily. She set down her glass as if she had forgotten I was there.

She handed me two photographs, of giant sculptured figures, one a man and one a woman kneeling with bent heads grieving for the death of their son. All sorrow was graven into that stone.

"The originals are over the grave of my son. I lost him in the war. There are replicas in the Kaiser Friederich Museum. You can go and look at them. I will draw a map for you so you can find them."

Silently I handed them back to her.

"War is stupid," she said in her deep sad voice.

"Why don't you come to America?" I said, my throat tight. But even as I said it I knew the answer.

"I am a German," she said.

Outside it was almost dark. I looked at my watch. Eight o'clock. Four hours I had been here. I rose swiftly.

"Forgive me, you must be tired." I took out my pocketbook. I gave her all the money I had.

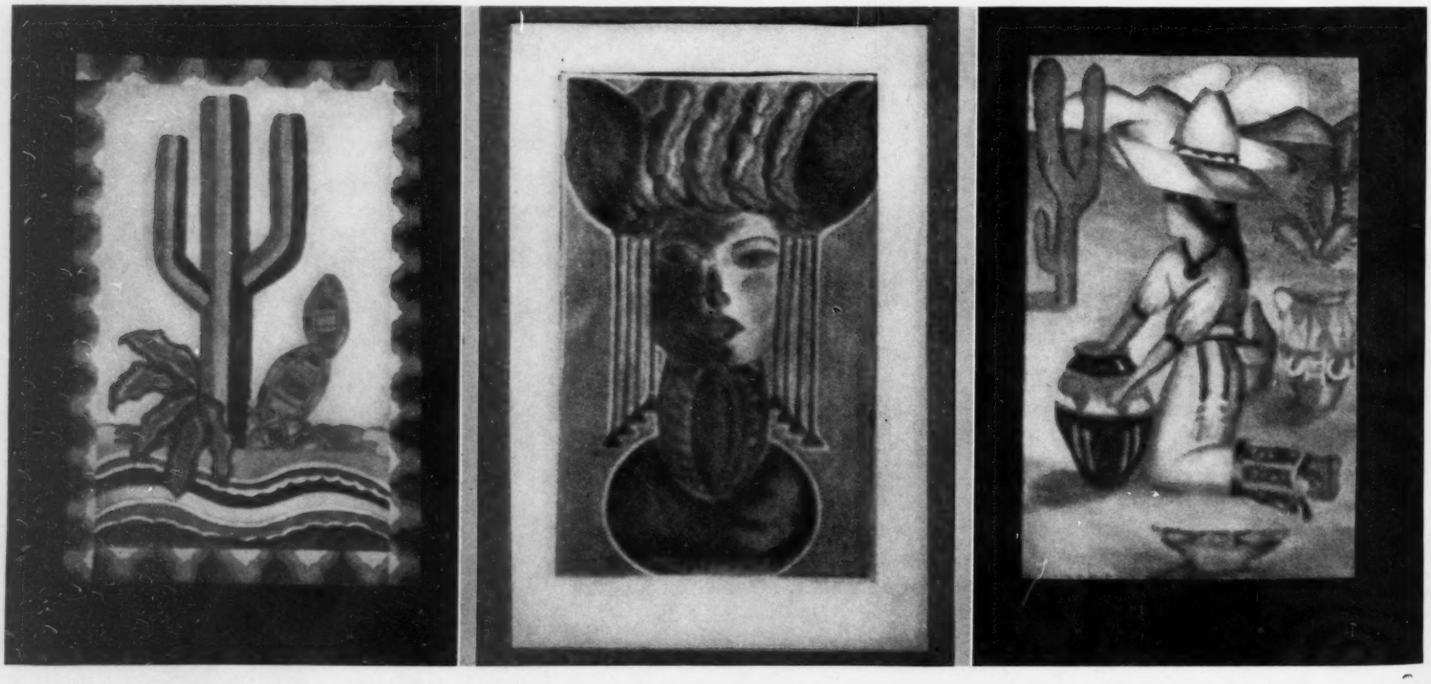
She picked up the pictures off the floor and signed the ones I had selected in a swift strong hand. "I shall do no more etching," she said, as she handed me the roll. "My eyes are not good enough any more."

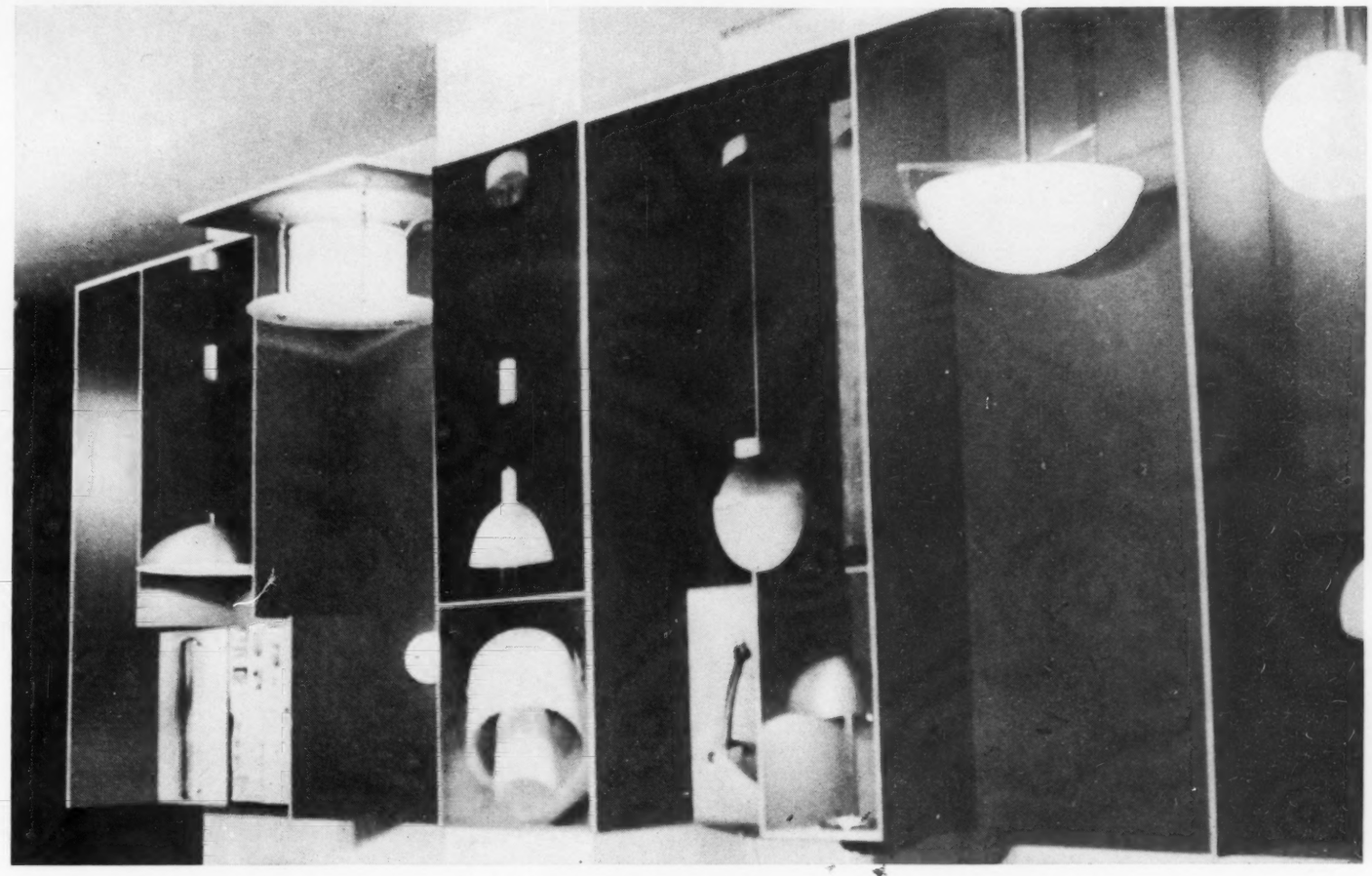
Suddenly she picked up a picture and thrust it into my hand. "It is one of the last things I have done," she said. "Take it with you."

I looked down at the etching in my hand, a self-portrait. It was a deep strong face that might have been a woman or a man. It was Kathe Kollwitz but it was more than Kathe Kollwitz. It was all the things she had seen and lived. In that face was carved the deep marks of all the stark suffering of the German people. But it was more than suffering too. It was a face that could look on that beaten peasant woman knocking on the door and not flinch. In this face was no surrender. Out of the tortured flesh the eyes stared back at me, vital and alive.

"Thank you," I said.

Three Creative Designs by Pupils of the Crispus Attuck High School, Indianapolis, Ind., Della Greer, Teacher





Student-designed lighting fixtures. Many in use today stem from these works.

THE NEW BAUHAUS, AMERICAN SCHOOL OF DESIGN, CHICAGO

By L. MOHOLY-NAGY

The idea of the Bauhaus education was born out of the conviction that provision had to be made for eliminating the gap between the economical and cultural potentialities of the industrial age and its realty. It seemed to be inevitable that new arts, sciences, machines and mass production were to become a part of our life and that their handling demanded a new mentality.

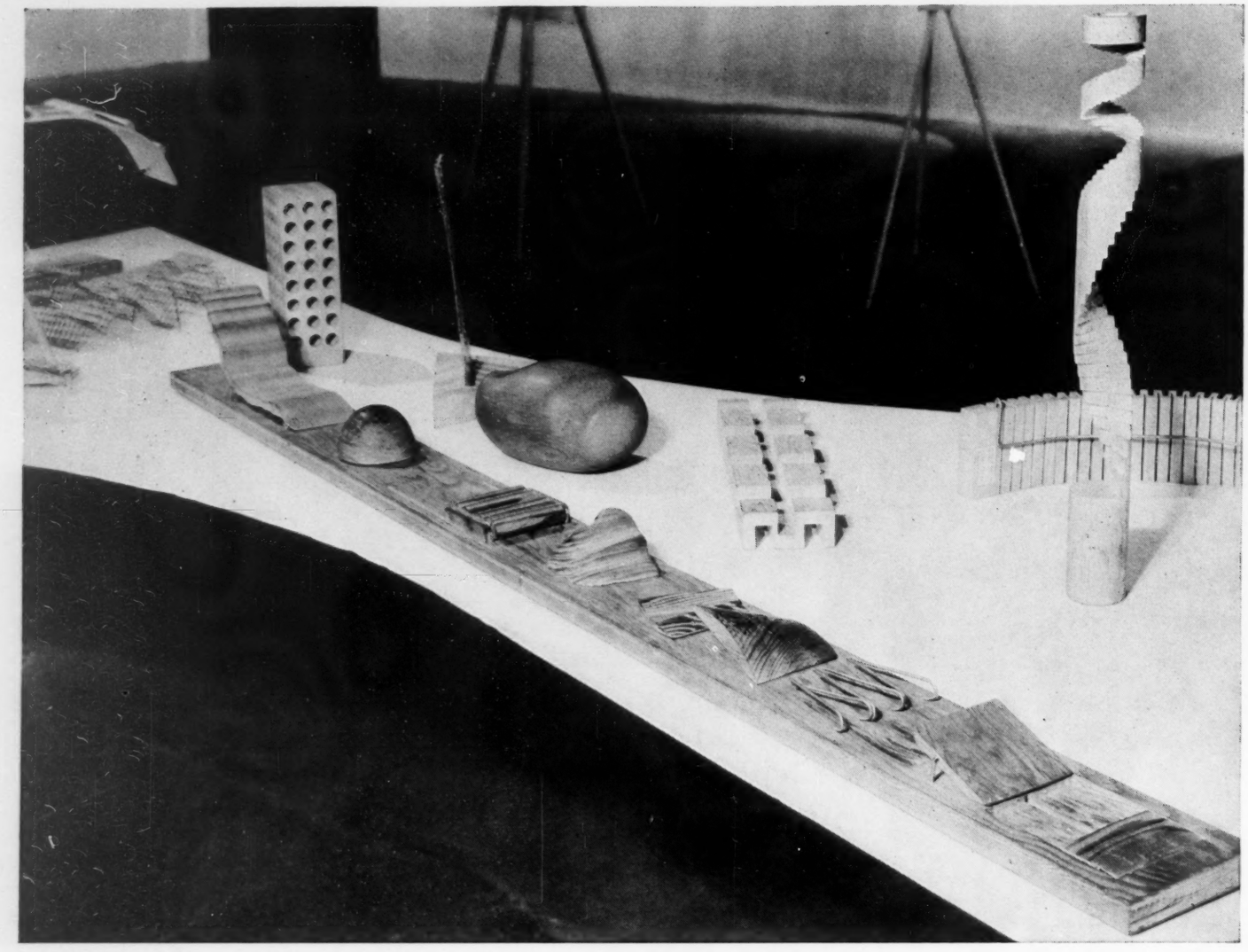
It was Walter Gropius, one of our greatest architects who made the first methodical approach to solve the problem. He declared that a designer has to think and act in the terms of our times. He wished to abolish the supremacy of the pure intellectual approach over handwork. He believed in the healthy balance of an integrated mental and emotional training based on sensory experiences, and pointed out that an art education leading to design at the drawing desk without thorough knowledge and practice of the industry processes must result in disastrous products.

He referred not only to the designer but to the architect and the artist as well, who, by ignoring the demands of changed times had been completely isolated from the daily work of the nation. Gropius founded the Bauhaus, an art university, in Germany in 1919 to reintegrate the artists into productive human activities. The results were surprising. By uniting an artistic, scientific and a real workshop training with tools and basic machines, by keeping in constant touch with advancing art and technique, with the invention of new materials, and new constructions, the teachers and students of the Bauhaus were able to turn out designs which had a decisive influence not alone on industrial production, but also in the reshaping of our daily life. I refer to the invention of tubular furniture, modern lighting fixtures, practical household appliances, new types of hardware, electrical contrivances, textiles, new typography, photography, etc., the functional results of a new vision.

This spirit became the guide of all progressive art education throughout the world; including the New Bauhaus, American School of Design, founded by the Association of Arts and Industries in Chicago, in 1937.

A four-year course trains the student practically and theoretically as a designer of hand and machine-made products in wood, metal, glass, textiles, stage, display and for commercial arts, exposition architecture, typography, photography, modeling and painting. An additional course of two years trains the student for architecture.

The first two terms are devoted to a **preliminary course,** which is obligatory to all students. It gives the funda-



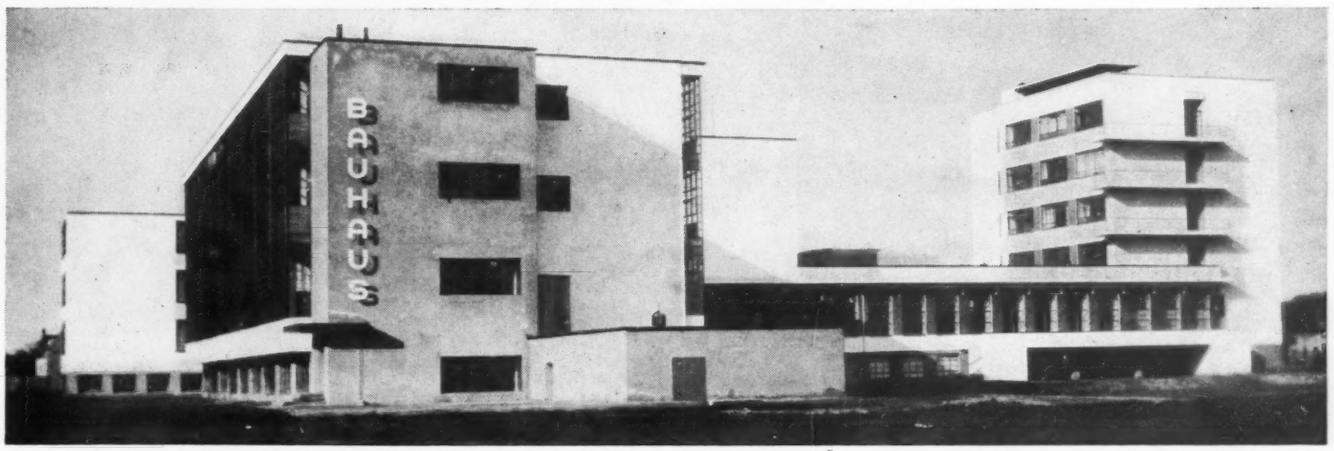
Experiments in the tactile properties of wood. The object in foreground is stroked for varied touch sensations.

mentals of shopwork, Intellectual Integration, physical and life sciences, modeling, drawing, lettering, photography, and music, and its objective is to teach inventiveness, to show the student the way to a universal outlook, to make him conscious of his creative power. The method of this education is to keep the sincerity of emotion, the truth of observation, the fantasy of the creativeness of the child in the work of the grown up. Of course, in the intellectual as well as the emotional development of the youth we have to learn to distinguish and to judge of the innumerable expressions which very often in this stage are distorted by imitation of experiences and creations belonging to another generation.

The basic workshop is a great aid to genuine development. Here the student experiments with tools and machines and with different kinds of material such as wood, metal, rubber, glass, textile, paper, plastics, etc., on a technical level which develops unhampered by conventions. No copying of any kind is resorted to in this workshop, nor is the student asked to deliver premature **practical** results. By working with the different materials he discovers step by step their typical possibilities and acquires a thorough knowledge of their appearance, structure, and texture, and potentialities for surface treatment. Also he becomes conscious of volume and space, a fundamental three dimensional design. In this year every topic receives equal attention giving him ample opportunity to discover preferences and inclinations before deciding on his vocational specialization.

In addition to the basic workship, analytical, life and geometrical drawing and lettering, modeling and photography provide further media of expression. A class for sound experiments and the building of musical instruments stimulates the auditory sense and gives the most direct experience of the organic connections of handicraft and art.

The student receives an elementary scientific education too, for his future task, through mathematics, physics, chemistry, biology and physiology, which are taught by scholars with a conscious approach for co-ordination. The course, Intellectual Integration, furnishes the student with information about these intellectual topics which have a bearing on the full understanding of his surroundings and the world of intellectual activity. Guest lectures on the his-



The Dessau Bauhaus. View from the northwest.

tory of art, philosophy, psychology, etc., widen his knowledge about contemporary movements.

After the first year, a trial exhibition of the students work is held, and after the four-years' course, a final examination.

The basic idea of the Bauhaus education is that everyone his emotional and intellectual power into activity, he will be able to do genuine creative work. This does not necessarily mean "art". Art is the expression on the highest level of a cultural epoch which can not be forced by any means. But the full knowledge of tools, materials and function makes possible for all work, such high quality, that an objective standard, not an accidental result will be obtained. Thus the Bauhaus does not aim at education of geniuses or even "free artists" in the old sense.

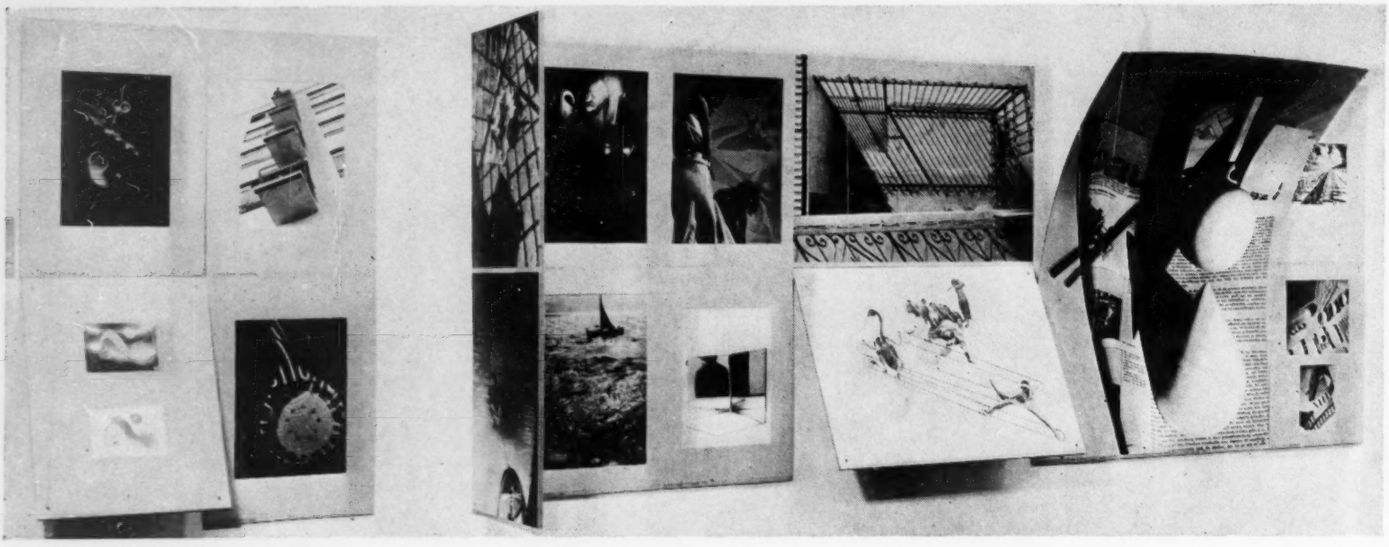
There are too many such "free artists" in the world: they are after minor talents with minor problems and without the possibility of ever making a living. The Bauhaus does not want to add to their number. As members of human society they must learn to face practical as well as spiritual problems. They have to see themselves not alone as artists (researchers) but also as designers and craftsmen who will make a living by furnishing the community with new ideas and useful products. This is the realistic basis of the workshop training. If however, by taking in all the practical and spiritual material offered to them during their training some of the Bauhaus students develop into "free artists", this will be on the basis of their personal responsibility.

The New Bauhaus offers six specialized workshops for those who successfully pass the first year examination. These six workships specialize in:

1. Wood, Metal.
2. Textile (weaving, dyeing, fashion).
3. Color (murals, decorating).
4. Light (photography, motion pictures, light display, typography).
5. Modeling (glass, clay, stone, plastics).
6. Stage (display, exposition architecture).

All these workshops are grouped around the main purpose: architecture. While in the special workshop the student receives a preparatory education which enables him to enter into the architecture department after graduating as designer. Then a further two years will supply the special instruction needed for the architectural degree. Courses will include in domestic architecture, town, state and country planning; landscape architecture social services: as schools, kindergartens, hospitals, recreation centers, etc., it is hoped that an architect with this type of education will be able to create buildings with a unity of inside and outside; this means that domestic appliances, furniture, textiles, light and color schemes will "match" one another and the whole. The Bauhaus-trained architect will know by his previous workshop training that only the closest collaboration of art, science and technology guarantees an organic building purposeful in the physical and spiritual sense as well he will know that only this type of building can guarantee the welfare and satisfaction of its inhabitants.

By creating a general standard of quality work the Bauhaus hopes to provide healthier and happier life for the community.



Some of the novel innovations in photography achieved by Bauhaus students.

THE EXHIBITION OF THE BAUHAUS

The shapes of "things to come," the forms of things which have recently become a part of everyday life—such as modern lighting fixtures, tubular steel chairs, new typography—and the fundamentally new principles that combine art with industry so that genuinely new forms and shapes can come into being was set forth at the Museum of Modern Art recently. The exhibition included paintings, photographs, and cameraless photographs, typography, furniture, lighting fixtures, rugs, textiles, mobile sculptures, metal and glass dishes, an abstract motion picture film and many other objects.

To bring into a fundamental unity all branches of art, architecutre and design the Bauhaus was founded by Walter Gropius, now chairman of the Department of Architecture at Harvard University. Its success was so remarkable, before it was closed in 1933 by the National Socialists, that it became a world-influence in modern architecture and design.

The Bauhaus was not merely a school in the ordinarily accepted sense but, much more, a community of architects, painters, sculptors, engineers, photographers and craftsmen who contributed their special talents and experience. The pupils studied and experimented under their direction. All, working together, continued to "learn by doing," discovering new principles and developing new techniques. Designs created in the Bauhaus were used in mass production. In this way the Bauhaus bridged the gay between the so-called "fine arts" and industry. It also began to solve the problem of fitting the artist to take his place in the machine age. As it grew in influence and reputation the Bauhaus brought together on its faculty more artists of distinguished talent than has any other art school of our time.

At the beginning the Bauhaus had about 225 students chiefly from Germany and Austria; within a few years at least fifty per cent of its students came from other European countries and the United States. Approximately two-thirds of them were men and most of them were in their early twenties. The Bauhaus masters, or teachers, were Walter Gropius, its founder and first director, Kandinsky, Klee, Feininger, Schlemmer, Itten, Moholy-Nagy, Bayer, Breuer, Stoelzl and others.

In 1925 the Bauhaus moved from Weimar to Dessau, where the new building, designed by Gropius and decorated, furnished and equipped in collaboration with the Bauhaus workshops, was completed in 1926. In the development of modern architecture it was the most important and influential modern building of the 1920's. In 1928 Gropius left the active directorship of the Bauhaus, together with Bayer, Breuer and Moholy-Nagy, to devote their time to private practice.

During the first decade of its existence hundreds of Bauhaus students went out into the world spreading by their works more than through their words the new doctrine of the Bauhaus unity of art, architecture and industrial design.

In his preface to the book which the Museum of Modern Art is publishing in connection with the exhibition, Alfred H. Barr, Jr., writes:

> "The world began to accept the Bauhaus. In America Bauhaus lighting fixtures and tubular chairs were imported or the designs pirated. American Bauhaus students began to return; and they were followed, after the revolution of 1933, by Bauhaus and ex-Bauhaus masters who suffered from the new government's illusion that modern furniture, flat-roofed architecture and abstract painting were degenerate or bolshevistic. In this way, with the help of the fatherland, Bauhaus designs, Bauhaus men, Bauhaus ideas, which taken together form one of the chief cultural contributions of modern Germany, have been spread throughout the world."

ART INSTRUCTION FILMS

By ELIAS KATZ

In the past few issues of this section we have dealt with the problems which face the film maker in the art fields, from planning the film through actual photographing. The concluding stage of film production is editing. If our readers have any questions about the various aspects of film production, we welcome inquiries. Those who wish to have their films reviewed by this department are also welcome to submit their films. Address inquiries and films to this department (% DESIGN).

Most of us are familiar with editing in one form or another. We know what a job the editor of a magazine or a newspaper has in organizing the various contributions, and blue-penciling uninteresting, objectionable, and unnecessary material. In the same way, the film editor's job is to take the many shots which have been filmed, and to organize them most effectively.

The actual process of editing is made easy by using a film "splicer." This is a device for cutting and cleaning the ends of each strip of film, and cementing the ends together so that the film will not break when it is run through a projector. Any child can learn to operate a splicer.

When you are ready for editing, you usually have a large number of separate scenes on separate reels. The first stage of editing consists of putting in sequence those scenes which go together. This is done by splicing the strips of film together in their rough order. Once these are in place, the film should be run through several times, to familiarize yourself with all the material in it.

Then comes the exciting and thrilling part of editing: Experimenting with the various relationships of scenes. What will be the effect of a sequence, if, instead of using a long shot* of a whole scene, we change or "cut" from a long shot, to a close up, to a middle view, to a long shot, etc.? What if a series of short staccato shots is contrasted with long drawn-out shots? What if a violent tempo is alternated with a slow-moving funereal pace? These are the questions which the film editor must ask himself as he works.

This is not to say that editing is the most important thing in a film. However, it is true that poor editing can kill a finely photographed film, and skillful editing may save a poorly photographed one. For example, some of D. W. Griffith's films of 1914-1916 like "Birth of a Nation" and "Intolerance" are still gripping and powerful. These films may be inferior from the point of view of modern Hollywood photographic technique, but their rhythm and movement are still stirring. Indeed Griffith's films have set the standards for fine editing, which have deeply influenced the development of the film as an art in America and in Europe.

If you are concerned with film making from the art point of view, you must take pains with the editing of your films. Use a good splicer, one that makes a clean splice easily, such as the Griswold, Bell and Howell, or Craig splicer.

Watch the film cement, and change it frequently, so as to retain its freshness. Be careful with handling the film during editing, especially if you are using the original reversible film, For once it is scratched, it is impossible to restore it. Whenever possible, use a duplicate film to work with.

But remember above all that the film is an art material, like paint or clay. It is a material which can be manipulated, through rearranging it in time sequences of different durations, to secure different effects. When you are editing the film you are designing with this medium. Here, too, we can apply our basic principles of design: Rhythm in the relationships of time sequences; dominance in the building up of climaxes; and harmony in the organization of relationships of sequences to form a unified whole.

(Next month the production of a motion picture for art appreciation.)

* See January 1939 issue of DESIGN for explanation of long shot, close up, and middle shot.

REVIEWS OF ART INSTRUCTIONAL FILMS

(In this issue we continue the reviewing of art instructional films. We would greatly appreciate having the names and distributors of motion pictures for art education which are of merit. Address such information to this department, % DESIGN.)

LYND WARD AT WORK. 1 Reel, 15 min. 16 mm. silent.

An insight into the methods used by the noted American graphic artist, engraving a block for his latest novel in wood cuts, "Vertigo." Through the use of high magnification, Mr. Ward's extraordinary technical competence in the wood engraving medium is revealed. The complete process is shown: sketching directly on the block, cutting the surface of the block, printing a proof, and the finished print. Distributed by Walter O. Gutlohn, Inc.

RHYTHM IN LIGHT. 1 Reel, 7 min., 16 mm. and 35 mm. sound.

This is one of the few abstract sound films. In it, light patterns, cones, spirals, spheres and other geometrical forms develop and are synchronized to the music of Grieg's "Anitra's Dance." Distributed by Expanding Cinema.

SYNCHROMY No. 2. 1 Reel, 7 min., 166 mm. and 35 mm. sound.

This is also an abstract sound motion picture. The producers of the film intended that the pictorial composition in light and abstract forms should create a mood for the eye, just as Wagner's music to the "Evening Star" creates a mood for the ear. Abstract forms are synchronized to the music. Distributed by Expanding Cinema.

MODELS IN MOTION. ¼ Reels, 4 min. each, 16 mm. and 35 mm. silent.

A set of 14 quarter-reels, showing various types of models in action. These show humans in various types of activities and sports, as well as animals in movement. The purpose of the films is to show a given model in motion and then permit the students to draw their memory picture of what was seen. The films were developed by the Woodbury School for Observation, an art school in Boston. Distributed by Eastman Kodak Co.

NEWS AND NOTES

The Metropolitan Museum of Art, New York, N. Y., conducts showings of motion pictures from the museum's film library on Tuesdays, Saturdays, Sundays, at 2:30 p. m. These are open to the public. Write directly to the Museum for catalog of films and film programs.

Mr. Bertelle M. Lyttle will present a program on "Filmic Poetry," a lecture with films, Sunday afternoon, April 9, 1939, at 3:45 p. m., at the Cleveland Museum of Art.

The Art Film Committee, composed of teachers of Fine Arts in the New York City High Schools, met on February 8, 1939, at Washington Irving High School. Reports of various committees were presented, including a report on methods of evaluating art teaching films by Mrs. Brock of Erasmus Hall High School, which will be the basis for a rating sheet to be used by the committee in examining various films. A committee was formed to make plans for the production of needed films for art teaching.

The Association of First Assistants in Fine Arts (Chairmen of Art Department) in New York City High Schools has a committee working on the place of motion pictures in art teaching. The work of this committee has been formally approved by the Board of Superintendents.

The Brooklyn Museum, Eastern Parkway, Brooklyn, New York, conducts weekly showings of motion pictures on Sundays at 3 p. m. The program for March 5th is "Sicilian Spring," "Rome," "Venice." For March 12th, "Native Arts of Old Mexico." For March 19th, "Southern France," and for March 26th, "A Trip Through the Province of Normandy, France."

DARK RAPTURE

"Dark Rapture" is one of the outstanding documentary films which has come out of Africa. Produced by the Denis-Roosevelt Belgian Congo Exposition, it reveals life in a little known portion of the world, with implications for our appreciation of the art which comes from such places. In the course of a year's work, the expedition filmed the taming of wild elephants, the primitive binding methods of the long-heads, the industriousness of the gentle pygmy race, tribal initiation rites and a truly magnificent and cultured race of giants in the heart of the jungle.

From the film we can develop an understanding of the background from which springs the culture and art of primitive peoples. The art of primitive peoples seems concerned primarily with the communicating of emotions usually associated with religious expression. Some tribes make masks to portray this emotion, some dance to simple or complicated rhythms, some adorn their bodies and tattoo their skins, and some make wooden and metal images to worship. As we see the life of tribe after tribe, their existence is tied to this religious rite and symbolism in more or less highly developed forms.

One section of the film gives a picture of a highly cultured and little known race of giants, rulers of the land in which they live. Stately, cultured, eight-foot tall specimens, they differ greatly from the surrounding Negro tribes both in level of culture, and in physical characteristics. No one knows where they came from, or when. But to those familiar with the beauty of Egyptian painting and sculpture, there can be little doubt that their origin was the race of noble Pharaohs of Egypt. How many thousands of years ago must their ancestors have traveled up to the source of the Nile, and wandered across the continent until they reached this fertile plateau in the heart of Africa, there to continue in unbroken form the culture of the lower Nile!

One of the thrilling moments of this film is the dances performed by these giants. The dancers are men, trained from youth in dancing and athletics, devoting their time only to the dance. For the expedition they danced a dance of welcome. Here truly was the incarnation of fluid bodily motion, in perfect design, in freely flowing rhythms, yet controlled by the beating of the drums. It is difficult to appreciate the power and grace of these men, unless they are seen in the film.

Besides the highlights mentioned above, there are many interesting sections. For example, pygmies building a bridge across a river, narrow escape from a forest fire, live volcanoes in eruption, and tribal feats of strength and endurance. In all, this is a memorable film from many points of view, and will be enjoyed by all. Distributed by Universal Pictures, Rockefeller Center, New York, N. Y.

(Do you have a film production problem? Do you have films you would like to have reviewed and criticized constructively? Send your films and requests for information to Elias Katz, c/o DESIGN).

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- Landscape
- Dutch Interior
- Hunting the Deer
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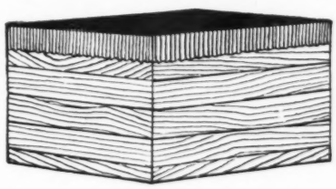

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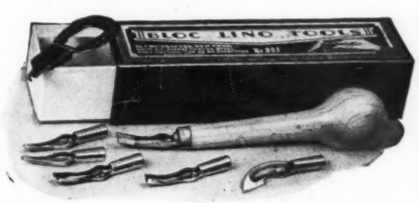

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KATHERINE SCHMIDT, Painter

On March 7, a one-man show of Recent Paintings by Katherine Schmidt opened at The Downtown Gallery, 113 West 13th Street, New York. The fourteen canvases, produced during the past two years, included portraits, figure groups, and still life, with the "genre" subjects predominating.

For those who have followed this artist's career through her solo exhibitions held periodically since 1923, the display of special significance. Hers is the unusual case of a nature artist who seeks and achieves a new means to express a new philosophy of life. With the change of subject matter, based on her present preoccupation with the "social scene," Miss Schmidt—through intensive research and experimentation—has succeeded in developing a style ideally suited for expressing her new ideas. The meticulous drawing, painstaking technique, the full-bodied modelling, all combine in creating a well-knit unit with no accent on any single element, in spite of her attention to detail. Miss Schmidt imbues each picture with a restrained exuberance which lends vital force to the statement she wishes to convey. Yet the observer is not conscious of the social message until the aesthetic message has been assimilated.

Her former love for still life still asserts itself in three examples of this subject shown, but more significantly so in the figure groups where still life is integrated to function in the composition as well as in the message. The figures, with one exception, are of men—men idling, or talking, or at work. They are portrayed with sympathy and with dignity. Their modern dress evidently furnishes intriguing problems in line and volume, in texture and design—problems which Miss Schmidt attacks with fervor and solves clearly in a manner uniquely her own. The paintings on view presented a rich contribution to which may be called the American school of classic realism—and to a record of contemporary thought.

The exhibition continued for three weeks, until March 25th. Paintings and sculpture by the gallery group will be on view in the main galleries.

FOUNTAIN PEN CONTEST

Conceding that the design of fountain pens has not kept pace with modern progress, the L. E. Waterman Co., world's oldest fountain pen manufacturer, is conducting a country-wide search to find designers for permanent places in their organization.

Large cash awards, in addition to the positions, are offered to stimulate widespread participation, and art schools in nearly all the states of the country have advised Waterman's of their interest.

"Artists are allowed utmost freedom," Elisha Waterman, executive vice-president, states. "We do not demand that a design conform to any particular ink container or filling device now in use. Chosen designs, however, will have to be adapted to a practical product.

"Anyone is eligible to participate," Mr. Waterman points out. "But all entries must be in by April 15th, 1939. Information about the contest may be obtained from the L. E. Waterman Co., 140 Thomas St., Newark, N. J."

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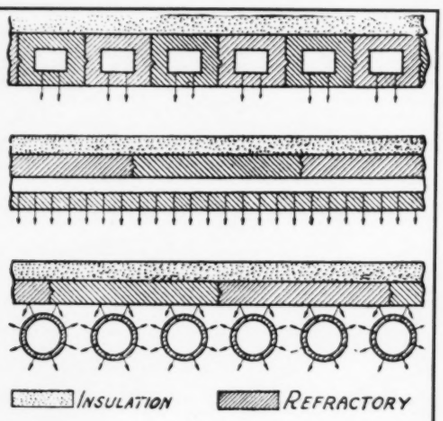

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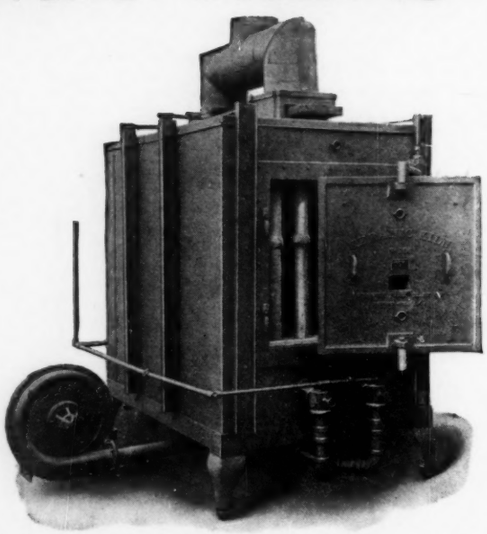

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NOVEL EXTERIOR

Unpainted redwood, applied in vertical strips and sand blasted to produce a novel color and texture effect, forms the unusual exterior surface of the Contemporary Arts Building at the New York World's Fair 1939.

The building, which will house an exhibition of the works of 800 contemporary American artists, is said to be the first structure ever erected in the eastern United States to make use of redwood as important architectural element.

Another unique feature of the building will be its murals, executed by Arthur Covey in lacquered brass. Depicting the arts of the western hemisphere, these murals give the appearance of huge brass stencils with reddish wlals as a contrasting background.

As a matter of fact, according to Frederick L. Ackerman, one of the architects, their design grew out of a study of stencils, and it was the original intention to use them merely to protect portions of the wall surfaces while sand blasting, thus producing an etched effect.

Mr. Ackerman, who was associated in the design of the bulding with Joshua D. Lowenfish and John Van Pelt, said that redwood was selected as a wall surface material because of its interesting color and texture, because it can be obtained in almost any size board and because it is subject to very slight shrinkage and twisting and has a very long life.

Sand blasting was employed to give life to the surface of the wood, he said. The process eats away the softer portions of the grain, creating a rough surface which reflects the light from all angles.

The Contemporary Arts Building covers almost an acre of ground in the Community Interests Zone of the Fair with the main entrance on Bowling Green, one side facing Tomorrow Town and the other flanking Rainbow Avenue. The building is shaped something like a modern telephone receiver, rotundas at either end corresponding to ear and mouthpiece. The main entrance facade is of plate glass with o columned portico in front, while the low central unit linking the two rotundas has a novel saw-tooth facade on the Rainbow Avenue side.

Approximately 34,000 square feet of redwood was required to sheathe the structure. For artistic as well as structural reasons it was decided to apply it vertically instead of adhering to more normal procedure. All boards were at least 28 feet long, and they varied in width, thickness and finish depending on location.

Boards to be used beneath the stencils were required to be 1⅛ inch thick, 8 inches wide and with grain running at an angle of less than 31 degrees to the face. Boards beneath porticos were not sand blasted, and their specifications were 13/16 of an inch thick, 20 to 30 inches wide and without limitations as to grain. For all other boards the specifications were: 13/16 of an inch thick, 10 to 15 inches wide and with grain running at an angle of less than 15 degrees to the face.

After sand blasting the boards were given a colorless stain and an application of waterproofing. The boards were nailed over gypsum sheathing, and the combination of the two materials is said to produce a wall of excellent insulation quality.

The interior of the building will be divided into twenty-three galleries, office, rest rooms and a mezzanine restaurant which will be entered from outside stairs on the side facing Tomorrow Town. Two galleries at either end of the building with ceilings thirty-five feet above the floor will be used for sculptural pieces, while the lower ceilinged galleries will house pictures and prints. All except the sculpture galleries at the main entrance will be lighted indirectly from drop ceilings. Walls will be painted in various shades of off white.

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